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THE TYPE LOCALITIES OF PLANTS FIRST DESCRIBED FROM NEW MEXICO

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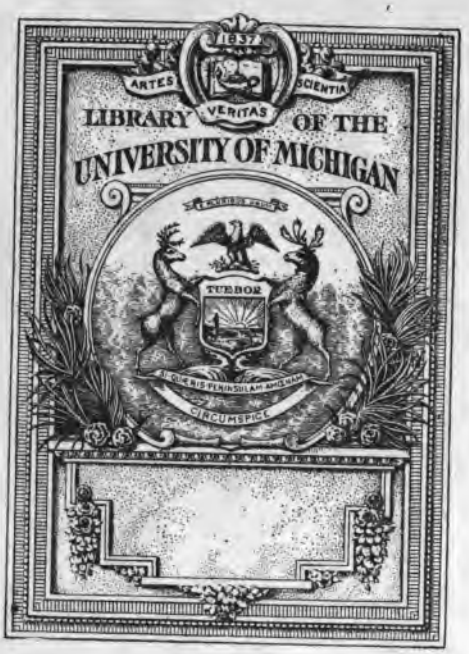
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THE TYPE LOCALITIES OF PLANTS FIRST DESCRIBED FROM NEW MEXICO

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By PAUL C. STANDLEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1910

BULLETIN OF THE UNITED STATES NATIONAL MUSEUM.
ISSUED OCTOBER 31, 1910.

PREFACE.

The accompanying papers are designed to assist students of the taxonomy and distribution, and to some extent of the ecology, of the New Mexican flora. The first contains an annotated list of all those plants that have their type localities in New Mexico. So far as can be learned no list of this kind has ever been prepared before for any State or Territory, in spite of the obvious advantages which such a work offers. It is interesting to learn that from New Mexico alone almost seven hundred new plants have been described. Accompanying the list of species is a list of localities with the names of the species described from each; and in order to facilitate the finding of the localities, a map of New Mexico has been prepared upon which all the type stations have been conspicuously marked. As an aid in the study of the collections made by some of the earlier botanical explorers of this region notes regarding their itineraries have been collected and tabulated. It has been found necessary in preparing the list of species to form several new binomials; these will be found listed at the end of the paper. The bibliography which forms the second of the papers is intended to be a complete index to the literature of New Mexican botany.

FREDERICK V. COVILLE,
Curator of the United States National Herbarium.

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Colored map of New Mexico	In pocket.

RELIEF MAP OF NEW MEXICO.

THE TYPE LOCALITIES OF PLANTS FIRST DESCRIBED FROM NEW MEXICO.

By PAUL C. STANDLEY.

INTRODUCTION.

In the endeavor to settle the application of old names it is often of the greatest advantage to know exactly where the specimens from which a certain species was described were collected. This is demonstrated by the difficulty experienced by botanists in determining the proper reference of names based upon plants cultivated in botanical gardens. With specimens from the type locality of a species one can often supplement a scanty type much better than with specimens that are apparently the same, but collected in other localities. When a description is brief and imperfect and no type has been designated, this is often the only method of interpreting the author's meaning.

Unfortunately it is only lately that botanists have come to regard the designation of types and type localities as important. The earlier botanical writers did not consider the practice necessary, underestimating the possible development of systematic botany. They were accustomed to assign their new species to large and often indefinite areas, such as "the eastern coast of North America," "Canada," "west of the Mississippi River," and areas of similar extent. As a result, when it has been found afterwards that there existed a group of closely related species not known to the earlier writer, any of which would fill the original description, it has often been extremely difficult to tell which member of the group was the basis of the proposed name.

Even when the early botanists cite a definite locality or region as the source of their specimens it can not always be accepted implicitly as the type locality, because of later changes in the application of geographical names. Thus Linnaeus credited to Virginia, when that State's territory was larger than at present, plants not known now to occur within its boundaries; and by other writers Louisiana is given as the source of plants collected hundreds of miles north of the present boundaries of the State of that name. These conditions make annotated lists of type localities like the present desirable.

One of the first works in which any attention was paid to the definition of type localities was Coville's Botany of the Death Valley Expedition. Under each species listed there is given the locality in which the original specimen was collected. Piper's Flora of Washington is another example of the same practice, while Miss Alice Eastwood and Prof. A. A. Heller have published similar lists. Dr. A. S. Hitchcock in some of the Contributions from the National Herbarium has done some especially useful work of this kind for the grasses. But, so far as the writer knows, no one has ever prepared a list of the nature of the one here presented. It would be very difficult to make such a compilation for one of the Eastern States because of the obstacles mentioned, but in the case of the newer Western States and Territories conditions are generally different. The larger number of the western plants have been described by the later botanists, Gray, Torrey, Greene, Watson, and others, who usually have assigned a new species to a definite region and often to a certain collection of a particular collector. Doctor Gray hardly considered Wright's numbers which he cites in Plantae Wrightianae as "types" in our sense of the word, but undoubtedly they were the plants chiefly used in drawing up his descriptions, and they may therefore be regarded as the types of his species.

The writer believes that in this list of species described from New Mexico the families from the first of the Bentham and Hooker sequence to the end of the Compositae are rather completely represented, but that some species of the remaining families have probably been overlooked. This results from the fact that in the two principal works dealing with New Mexican botany, Plantae Fendlerianae and Plantae Wrightianae, Doctor Gray treated only the former families. Within them he described most of the new plants in the classic collections of the earlier explorers of the southwestern flora. When we look for the diagnoses of the new species described in the remaining groups, we can find them in no one or two papers, but must look for them in dozens of places scattered all through our botanical literature.

This paper is designed to aid not only the herbarium student of New Mexican botany but collectors in the Territory as well. It will enable the latter to re-collect some of our species at their original stations. To aid them, the localities have been defined as carefully as possible and suggestions have been made in many cases regarding the particular place in a region where a plant is likely to be found. Some of the localities mentioned in the earlier reports are no longer to be found on the map of New Mexico, and special attention has been given to their location. Place names in the Southwest, as in any new country, are continually changing, and it seems worth while to leave a record of some of these changes before they are forgotten.

Under each species in the list, when practicable, are given the type locality, name of collector, type number, and date of collection, and any other data that have seemed important. In addition the writer has attempted to give the accepted name for each species whenever it has been found necessary to transfer it to another genus or when it has been found to be a synonym. Unless otherwise stated, the name listed is, so far as the writer knows, a valid one. No effort has been made to determine whether the numerous names published during the last few years represent good species or not.

In some cases it has been found impossible to assign any definite part of New Mexico as the source of the specimens upon which a new species was based, but such instances are comparatively few. In Plantae Fendlerianae the localities are given with commendable definiteness and in Plantae Wrightianae with almost equal detail.

Two localities in New Mexico are remarkable for the number of plants described from them, Santa Fe and Santa Rita. The reason for this is the fact that the first extensive collections made in the Southwest were made largely at these two places. Although there is hardly a county in New Mexico in which a few new species have not been found, it is not to be inferred that the flora of the Territory has been thoroughly explored and that new plants are no longer to be discovered within its boundaries. This is far from being the case. With but few exceptions the areas that have been best explored are those most easily reached by railroad. In the more remote parts of New Mexico there are hundreds of square miles that have never been visited by any botanical collector. When explored, these will reveal dozens of new plants to swell our list. Even in the best-known regions new plants are continually being found. More collecting has been done in the Organ Mountains than in any other part of the Territory, yet a botanist seldom visits them, limited in extent as they are, without finding something new to their flora.

The number of plants listed here is 690, a truly remarkable number and one that will be exceeded by but few States. California could furnish a much longer list and doubtless also Colorado and Texas, but probably no other State. It would be interesting for the sake of comparison, aside from other considerations, if such lists could be prepared for other States, especially those of the West, and perhaps for some of the eastern ones or for groups of those which together form homogeneous areas.

The following data of New Mexican species will be of interest. Doctor Gray has described more than any other author, 173 in all. Doctor Greene has named almost as many, 171; Doctor Engelmann, 59; Doctor Torrey, 52; Prof. E. O. Wooton, 42; and Prof. T. D. A. Cockerell, 32. There has been hardly a botanist in America engaged

in taxonomic work since the middle forties who has not based one or more of his names upon New Mexican material.

In this list the specific name "*neomexicanum*" occurs rather frequently. Doctor Gray seems to have been responsible for this combination of Greek and Latin forms. The proper adjective, "*novomexicanum*," has been little used. One editor recently even went so far as to object when Professor Wooton used the name "*novomexicanum*," saying that "*neomexicanum*" was "the better or at least more usual."

More than once this name has been mistakenly applied to plants whose types really came from other regions and which in some instances are not known to occur within the Territory. The most glaring example of this is to be found in the case of two species of Juncus named not very long ago; one, *neomexicanus*, was founded upon material from Arizona, while the other, *arizonicus*, was based upon a New Mexican collection. This may have been due to a slip of the pen, otherwise it is inexcusable.

For some cases of the misapplication of this name the authors should not be blamed too harshly. Wright's labels for his collection of 1849 read: "Collected on a journey from San Antonio, Texas, to El Paso, New Mexico." Now, New Mexico at that time was a term which included parts of Chihuahua, Texas, and Arizona, in addition to its present territory. The El Paso thus referred to is not in New Mexico and it is not El Paso, Texas, but the present town of Ciudad Juárez, Chihuahua. No more reliance can be placed upon the heading of Wright's labels for his collections made in 1851–52. The labels of the Mexican Boundary Survey are equally deceptive; they read: "Collected * * * chiefly in the valley of the Rio Grande, below Doñana." As a matter of fact, few of these boundary plants came from New Mexico, most of them having been collected in Texas. As a consequence of the wording of these two sets of labels many new species have been described, which their authors, sometimes through a lack of knowledge of these facts and sometimes through ignorance of the geography of the Southwest, have assigned to New Mexico, when the types really were collected sometimes hundreds of miles outside the Territory's boundaries. Even now it is often impossible for the best informed to tell whether some of Wright's specimens came from New Mexico, from Texas, or from Mexico, outside of the rare instances in which the exact locality happens to be written upon the label.

Some of the plants wrongly accredited to New Mexican territory are referred to in this list, but there are many more that are not mentioned. Sometimes it has been difficult to decide whether a plant was based upon material from New Mexico or from some other State or Territory; some of these cases are discussed here, but

most of them have been neglected because of their comparative unimportance.

The writer wishes to acknowledge his indebtedness to the Gray Herbarium, from which very helpful notes regarding some of Wright's numbers have been received; and to Mrs. Agnes Chase, of the Department of Agriculture, who has given assistance in the preparation of the list of grasses. To Prof. E. O. Wooton, of the New Mexico Agricultural College, without whose aid the list would never have been completed, he is especially indebted for help given at many times in the preparation of the lists of plants and localities.

ITINERARIES OF EARLY COLLECTORS.

The labels attached to the plants collected by Wright, Bigelow, and others of the earlier collectors are, as every botanist knows, usually very incomplete regarding locality, date of collection, and other details. With a knowledge of the localities visited by a collector and the dates of his visits one can often add much to the data given by a label. To make the needed information more accessible, it has seemed desirable to give here a condensed account of the routes of the more important of the earlier botanical collectors. The facts have been gathered from various sources; sometimes from notebooks and sometimes from geographical or other reports.

Route of Dr. A. Wislizenus. 1846.

Dr. A. Wislizenus while making a tour of the Southwest for scientific purposes, came into northeastern New Mexico from Kansas and what is now Oklahoma in the summer of 1846. It is uncertain upon what day he crossed into New Mexico. The following details of his route within the Territory are compiled from his published journal.[a]

June 17. Cold Spring to McNees Creek.
18. To Cottonwood Branch and Rabbits Ear Creek.
19. To Rock Creek by Round Mound.
20. Across Whetstone Creek to "Point of Rocks."
21. To the Rio Colorado, "the principal headwaters of the Canadian River."
22. Across Ocaté Creek.
23. To Santa Clara and Wagon Mound.
24. Across Wolf Creek to the Rio Mora.
25. To Gallinas Creek and Las Vegas.
26. Tecolote Abajo to San Miguel.
27. To the Rio Pecos and near the old Pecos ruins.
28. To Cottonwood Branch. (From Wislizenus's description this seems to have been at or near the present town of Glorieta.)

[a] A. Wislizenus. Memoir of a tour to northern Mexico, connected with Colonel Doniphan's expedition, in 1846 and 1847. 141 pp. Washington, 1848.

June 29. Through Apache Canyon.
30. To Santa Fe.
July 1 to 8. At Santa Fe.
8. Santa Fe to Agua Fria.
9, 10, 11. To the placer mines and through the Sandia Mountains.
12. To Albuquerque.
13 to 16. At Albuquerque.
17. To Sandoval's hacienda.
18. Along the Rio Grande Valley.
19. To a camp opposite Isleta.
20. To Alamos de Pinos and the "hacienda of Mariano Chavez's widow."
21. Chavez to Peralta, Valencia, and Tomé.
22. To Casas Coloradas.
23. Along the Rio Grande.
24. Past Joyita.
25. Joya (La Jolla) and along the Rio Grande.
26. Through Sabino and near Parida.
27. Along the Rio Grande.
28. Opposite Socorro to Lopez.
29. Lopez to the upper end of the Jornada del Muerto.
30. Past Valverde.
31. Along the Jornada near the Rio Grande.
Aug. 1. Past Fray Cristobal (Jornada del Muerto).
2. Past Laguna del Muerto and Ojo del Muerto.
3. Past Alamos to Barilla (Jornada del Muerto).
4. Along the Jornada del Muerto.
5. From a camp on the river at Robledo to Dona Ana.
6. Rio Grande Valley below Dona Ana.
7. To the upper crossing of the Rio Grande.

Routes of Charles Wright. 1851-1852.

Charles Wright, at the suggestion of Dr. Asa Gray, visited the southwest in 1849 and in 1851–52 for the purpose of making botanical collections. The following notes regarding his collections are taken from a paper published by Prof. E. O. Wooton in the Bulletin of the Torrey Botanical Club:[a]

Practically all the plants of the 1849 collection were gathered in what is now the State of Texas. Wright may have entered what is now New Mexico on the return journey, between October 12 and October 20, but this is quite doubtful, since the party apparently went down the river to San Elezario and then turned eastward.

The plants obtained on the 1851 trip were mostly collected in New Mexico (about Santa Rita), though all the time from September 2 to October 4 was spent on a trip through southeastern Arizona and northeastern Sonora.

Nearly all the plants collected in 1852 were obtained in Texas. He made a ten days' trip to Lakes Gusman and Santa Maria in northern Chihuahua, and another of four or five days to Fort Fillmore and the Organ Mountains, in southern New Mexico.

A new difficulty arises here, since the specimens of the 1851 and 1852 collections were sent out under the same printed label and it is not possible to tell which specimens were collected each year.

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[a] Southwestern localities visited by Charles Wright. Bull. Torrey Club **33**: 561–66. 1906.

The following notes regarding Wright's route in New Mexico were taken from Wright's field notebooks by Professor Wooton:

1851.
July 4–5. Rio Grande bottom above Frontera and at the cottonwoods.
9, 18, and 19. Valley of the Rio Grande below Dona Ana and at Dona Ana.
29. From Dona Ana to San Diego, the crossing of the river.
30. Santa Barbara.
31. From Santa Barbara to Mule Creek and Cooks Spring.
Aug. 1. From Cooks Spring to Mimbres, passing Mimbres Mountains.
2. From Mimbres to Copper Mine Creek.
4–6, 8, 11–13, 15, 18, 19, 20, 22, 23, 26, 27. Copper Mines (along creek, in mountains and ravines near).
28. Apache de hoo[a] and Ojo de Vaca.
29. Near and at Ojo de Gavilan and on toward Condes Camp.
31. From Ojo de Gavilan to Condes Camp and at the latter.
Sept. 1. About Condes Camp.
From this date until October 4 Wright was in Arizona and Mexico.
1851.
Oct. 4, 5. Guadalupe.
5, 6, 7. Valley of the Sierra de las Animas.
7. Las Playas Springs.
8. From Las Playas to Copper Mines.
9, 11, 13, 15–18, 20, 21, 23. Copper Mines (on mountains, hillsides, along the creek, etc.)
25, 27. From Cobre to the Mimbres and along the Mimbres.
28, Nov. 1. Cobre, on hills and along creek.
Nov. 2. Around the hot springs.
2. Bottom of Mimbres and at Cooks Spring.
3. Mule Creek and "Hole in rock."
4, 5, 6. Bottom of Rio Grande.
From this date until April, 1852, Wright was in Texas and Chihuahua.
1852.
Apr. 29. Camp Fillmore.
29, 30. Organ Mountains.

Route of Whipple's Exploring Expedition. 1853.

This expedition was one sent out by the Federal Government for the purpose of finding a route from the Central States to California. It entered New Mexico from the Panhandle of Texas and after crossing the Territory passed into Arizona. Dr. J. M. Bigelow was the botanist of the expedition and made large collections. Most of his plants were gathered east of Albuquerque, the season, west of this point, having become too late for botanical collecting. Doctor Bigelow later collected in southwestern New Mexico, but the route followed and the dates of collection are not accessible. The following itinerary is taken from the published reports of the expedition:[b]

[a] Propably Apache Teju.

[b] Route near the thirty-fifth parallel, explored by Lieut. A. W. Whipple, topographical engineers, in 1853 and 1854. Pac. R. Rep. **4**: 1–288+iv. 1856.

No. of camp.	1853.
47. Cañada de Truxillo, lat. 35° 6′ 15″, long. 103° 9′ 50″ (just outside New Mexico, if the latitude and longitude are correct)	Sept. 19
48. Branch Tucumcari Creek	Sept. 20
49. Tucumcari Creek	Sept. 21
50. Laguna Colorado	Sept. 22
51. Arroyo Cuerbito	Sept. 23
52. Hurrah Creek	Sept. 24–25
53. Sheep Spring	Sept. 26
54. Anton Chico	Sept. 27–28
55. Cañon Blanco	Sept. 29
56. Laguna Blanco	Sept. 30
57. San Pedro Pass	Oct. 1
58. San Antonio	Oct. 2
59. Albuquerque	Oct. 3–Nov. 6
60. Atrisco	Nov. 8
61. Isleta	Nov. 11
62. Rio Puerco	Nov. 11
63. Rio San José	Nov. 11–12
64. Covero (properly spelled Cubero)	Nov. 14
65. Hay Camp	Nov. 15
66. Sierra Madre	Nov. 16
67. Agua Fria	Nov. 17
68. Inscription Rock	Nov. 18
69. Ojo del Pescado	Nov. 19
70. Zuni River	Nov. 21–25
71. Arch Spring	Nov. 26–27
72. Cedar forest	Nov. 28

One or the other of these last two (it is not clear which) was the last camp in New Mexico.

Route of Pope's Expedition.[a] 1854.

Like Whipple's expedition, Pope's had for its purpose the discovery of a route between the Central States and the West. The company started eastward from El Paso in February of 1854. The party was in New Mexico for only a short time, and on account of the earliness of the season collected only a few plants in the Territory, most of the collections being made in Texas. The name of the botanical collector is not given, but the plants are usually considered as collected by the commander of the expedition.

Feb. 23. Plain (in New Mexico just above the Hueco Tanks, which are in Texas).
24. Cotton Wood Spring.
25. Thorns Wells (Los Cornudos).
26. Plain.

From February 26 until March 25 the party was in Texas; then their route led them northward and they crossed the southeastern corner

[a] Report of exploration of a route for the Pacific Railroad near the thirty-second parallel of north latitude from the Red River to the Rio Grande, by Brevet Captain John Pope, Corps of Topographical Engineers. Pac. R. Rep. 2[4]: 1–185. 1854.

of New Mexico. Part or all of the following camps were in New Mexico:

Mar. 25. Llano Estacado.
26. Sand hills.
27. Llano Estacado.
28. Llano Estacado.

Route of Parke's Exploring Expedition.[a] 1854.

The purpose of this expedition was similar to that of the two just described. Parke's company came into New Mexico from Arizona in 1854, going to El Paso by way of the Copper Mines and Fort Fillmore. The latter is now an abandoned military post in the Mesilla Valley, about 8 miles south of Las Cruces. The plants collected on this expedition were gathered by Dr. Thomas Antisell, the geologist of the expedition. The party was in New Mexico on the following dates:

No. of camp.	1854.
82. El Peloncillo	Aug. 4
82. Dry laguna	Aug. 5–6
83. Penasquitas	Aug. 7
84. Ojo de Vaca	Aug. 7–8
85. Left bank of Rio Mimbres	Aug. 9–10
86. Cooks Spring	Aug. 11–12
87. Mesilla Valley near the Rio Grande	Aug. 12
89. Near Fort Fillmore	Aug. 21

The party remained at Fort Fillmore for some time, but no plants seem to have been collected there.

DESCRIPTIVE LIST OF TYPE LOCALITIES.

All the localities mentioned in the list of species are included here, except in cases where it seems impossible to fix the type locality exactly. Unless otherwise mentioned, all the localities will be found upon the accompanying map.[b] Under each locality is given a list of the plants that have been described from specimens gathered there.

Albuquerque. Altitude, 1,500 meters. **F5.**

The largest town of New Mexico, in the central part of Bernalillo County, on the east bank of the Rio Grande. Doctor Wislizenus, Dr. J. M. Bigelow, Dr. C. L. Herrick, Prof. T. D. A. Cockerell, and perhaps others, have botanized here.

Corispermum marginale.
Dalea scariosa.
Gnaphalium strictum.
Heliotropium xerophilum.
Opuntia clavata.
Parryella filifolia.

[a] Report of explorations for that portion of a railroad route, near the thirty-second parallel of north latitude, lying between Dona Ana, on the Rio Grande, and Pimas villages, on the Gila, by Lieut. John G. Parke, Corps of Topographical Engineers, Pac. R. Rep. 2[5]: 1–28. 1854.

[b] The letters and figures at the right refer to the map.

Animas Creek. D9.

A small stream at the south end of the Black Range, running north and west of Hillsboro, in Sierra County, toward the Rio Grande. Mr. O. B. Metcalfe collected here in 1904.

Acacia constricta paucispina. *Meibomia metcalfei.*

Anton Chico. Altitude, 1,625 meters. I5.

A small Mexican settlement on the Pecos River in the extreme northwestern corner of Guadalupe County. The only botanist who has ever visited the place was Doctor Bigelow, in 1853.

Cereus phoeniceus conoideus. *Opuntia engelmanni cyclodes.*

Aztec. Altitude, 1,700 meters. C1.

The principal town of San Juan County, in the northern part of that county. Mr. C. F. Baker collected here in 1899.

Amelanchier crenata.
Amelanchier rubescens.
Arabis formosa.
Astragalus oocalycis.
Cheiranthus aridus.
Erigeron setulosus.
Lithospermum oblongum.
Lupinus aduncus.
Lupinus ammophilus.
Oreocarya lutescens.

Barranca. Altitude, 2,100 meters. G2.

A small Mexican town, in the southwestern part of Taos County, near the Rio Grande. Prof. A. A. Heller collected near here in 1897.

Pentstemon caudatus.

Bear Mountain. Altitude, 2,450 meters. B9.

A peak standing a few miles northwest of Silver City, in Grant County. Dr. E. L. Greene and Mr. O. B. Metcalfe have collected in this locality. There are, however, several other peaks of this name in New Mexico.

Echinospermum ursinum. *Rhamnus ursina.*
Mimulus cordatus.

Ben Moore. C10.

This name was applied by Lieutenant Emory to a peak in the Mimbres country, near Santa Rita, in honor of a friend. The name is no longer in use. Besides Lieutenant Emory, Wright seems to have collected here.

Mamillaria aggregata. *Pedicularis centranthera.*

Beulah. Altitude, 2,400 meters. H3.

A post-office on the Rio Sapello, near the eastern edge of the Pecos River National Forest, in the northwestern part of San Miguel County. Prof. T. D. A. Cockerell has collected here at various times.

Clematis occidentalis albiflora. *Humulus lupulus neomexicanus.*
Delphinium sapellonis. *Viola wilmattae.*

Black Range. **C9.**

A range of mountains running north and south in the western part of Sierra and the northeastern part of Grant County. The highest peaks reach an altitude of about 3,100 meters. Mr. O. B. Metcalfe made a large collection about the south end of the range in the summer of 1904 and the spring of 1905.

Acacia constricta paucispina.
Antennaria anacleta.
Bidens cognata.
Callisteris formosissima.
Chaptalia alsophila.
Coleosanthus axillaris.
Disaccanthus luteus.
Drymaria depressa.
Helianthella majuscula.
Heuchera versicolor.
Ionoxalis monticola.
Meibomia metcalfei.
Pectis taxifolia.
Phlox mesoleuca.
Ptelea neomexicana.
Silene concolor.
Sophia obtusa.
Sophia serrata.
Townsendia formosa.
Toxicodendron punctatum.

Burro Mountains. **B9.**

A small range west and southwest of Silver City, in Grant County, the highest peaks reaching an elevation of about 2,415 meters. The range was visited by Thurber and by Parke's expedition. Dr. H. H. Rusby was here in 1881 and Mr. O. B. Metcalfe in the summer of 1903.

Hymenoxys metcalfei.
Obione acanthocarpa.
Panicum lachnanthum.
Pentstemon thurberi.
Ptelea undulata.
Ranunculus nudatus.

Cañoncito. Altitude, 2,060 meters. **G4.**

A station on the Santa Fe Railroad, in the eastern part of Santa Fe County, southeast of Santa Fe. Prof. A. A. Heller visited the locality in the summer of 1897. The type of *Mentzelia parviflora* was collected between here and Santa Fe.

Cañon Largo. **D2.**

A canyon tributary to the San Juan River, in the eastern part of San Juan and the western part of Rio Arriba County. Doctor Newberry visited the region in the early fifties.

Chrysothamnus newberryi.

Capitan Mountains. **H8.**

A range in the south central part of Lincoln County. Its highest peak is about 3,000 meters. F. S. and Esther E. Earle collected here during the summer of 1900. Miss Josephine Skehan collected in the same region, especially about Gray, in 1898.

Coleosanthus modestus.
Mirabilis linearis subhispida.
Mirabilis oxybaphoides glabrata.
Solidago aureola.

Chama. Altitude, 2,360 meters. **F1.**

A small town in the northern part of Rio Arriba County, on the Denver and Rio Grande Railroad. Mr. C. F. Baker collected here in 1899. Mr. George E. Osterhout seems to have visited the place also.

Allium sabulicola.
Chrysothamnus bakeri.
Grindelia subincisa.
Lupinus ingratus.

Cimarron River. **M1.**

That part of the stream which is in New Mexico is in Union County in the extreme northeastern part of the Territory. Wislizenus and Fendler crossed the river on their way to and from Santa Fe, following one of the routes of the Santa Fe Trail. Doctor Wislizenus speaks of several branches of the stream. *Talinum calycinum* was collected by Wislizenus along the Cimarron, but whether in New Mexico or elsewhere one is unable to tell.

Cliff. Altitude, 1,360 meters. **B9.**

A post-office on the Gila River in the northern part of Grant County northwest of Silver City. Mr. O. B. Metcalfe and Mr. J. G. Smith have collected here.

Sitanion caespitosum.

Cloudcroft. Altitude, 2,700 meters. **H9.**

A small town, prominent as a summer resort, on the summit of the Sacramento Mountains in central Otero County. Prof. E. O. Wooton has collected here at various times.

Polemonium pterospermum.
Rosa neomexicana.

Cobre.

See Santa Rita.

Condes Camp.

In the western part of Grant County near the Arizona boundary, visited by Wright.

Anoda pentaschista.
Cucurbita digitata.
Galactia tephrodes.

Cooks Spring. Altitude, 2,250 meters. **D10.**

An old ranch, well known in the early days as a watering place, was located here in the extreme northern part of Luna County. Doctor Bigelow and perhaps others of the early botanists collected here.

Gilia bigelovii.
Pentstemon dasyphyllus.

Copper Mines.

See Santa Rita.

Del Norte.

See Rio Grande.

Deming. Altitude, 1,290 meters. **D11.**

A town in the central part of Luna County of which it is the county seat. *Sphaeralcea simulans* was collected on the surrounding plains by Professor Wooton.

Dog Spring. **B12.**

Or Ojo del Perro, in the southeastern corner of Grant County near the Mexican boundary line. E. A. Mearns visited the place while making collections along the Mexican boundary.

Hymenoxys chrysanthemoides mearnsii.

Dona Ana. Altitude, 1,170 meters. **E10.**

A small Mexican settlement standing on the mesa between 1 and 2 miles east of the Rio Grande in Dona Ana County, a few miles north of Las Cruces. It is one of the oldest settlements in southern New Mexico and the only one in this part of the country mentioned by Wislizenus which is now in existence. All the plants that have their type localities here were collected by that explorer, but Prof. E. O. Wooton has collected in the vicinity frequently.

Echinocactus wislizeni.
Mamillaria macromeris.
Maurandia wislizeni.
Opuntia filipendula.
Phaseolus angustissimus.

Eagle Creek. **H8.**

A small stream in the White Mountains in the southern part of Lincoln County, flowing eastward into the Rio Ruidoso. Professor Wooton collected here in 1897 as well as at other times. Gilmores Ranch, mentioned elsewhere, is on this stream.

Aster hesperius wootonii.
Philadelphus argyrocalyx.
Scrophularia montana.

Elizabethtown. Altitude, 2,540 meters. **H2.**

A small town in the extreme western part of Colfax County. Mrs. O. St. John made a small collection of plants in the vicinity a few years ago.

Delphinium cockerellii.

Espanola. Altitude, 1,670 meters. **G3.**

A Mexican town on the Rio Grande in the extreme southeastern part of Rio Arriba County, on the Denver and Rio Grande Railroad north of Santa Fe. Prof. A. A. Heller collected a few plants here in 1897.

Hymenopappus arenosus.

Florida Mountains. Altitude, 2,190 meters. **D11.**

A small, narrow range of steep peaks in the central part of Luna County southeast of Deming. Dr. C. L. Herrick of the University of New Mexico collected here in the late nineties and Mr. E. A. Goldman of the Biological Survey in the autumn of 1908.

Gutierrezia goldmanii.

Fort Bayard. Altitude, 1,850 meters. **C9.**

Formerly a military post, now maintained by the Government as a sanitarium for tuberculosis patients, in the eastern part of Grant County between Silver City and Santa Rita. Dr. E. L. Greene botanized in the region in the early eighties, and Mr. J. C. Blumer made a small collection of plants here a few years ago.

Ptelea subvestita.

Fort Wingate. Altitude, 2,000 meters. **B4.**

The only military post now occupied in New Mexico, in McKinley County a few miles southeast of Gallup. Dr. W. Matthews, a surgeon connected with the post, collected here in 1882.

Astragalus matthewsii. *Astragalus wingatanus.*
Astragalus procumbens.

Fray Cristobal. **E8.**

According to Doctor Wislizenus, who passed by here in 1846, this was a name of rather loose application given to a place on the east side of the Rio Grande in southeastern Socorro or northeastern Sierra County, about 40 miles below the town of Socorro. It was the last camp before starting across the Jornada del Muerto. There is a peak of this name just east of the river in the extreme northeastern corner of Sierra County, and it is probably the peak rather than the surrounding country to which the name really was applied.

Dithyraea wislizeni. *Larrea glutinosa.*

Fresnal. Altitude, 1,950 meters. **G9.**

A post-office in the Sacramento Mountains, in the north-central part of Otero County, between Highrolls and Tobogan. It is now known as Wootens. Prof. E. O. Wooton has collected here at various times.

Ribes mescalerium.

Frisco. Altitude, 1,670 meters. **A8.**

A small settlement in the western part of Sierra County, in the Gila National Forest, on the San Francisco or, as it is more commonly called, the Frisco River. Professor Wooton has botanized here and in the surrounding region.

Juniperus megalocarpa. *Sphaeralcea laxa.*

Galisteo. Altitude, 1,820 meters. **G4.**

A Mexican town on the Santa Fe Railroad in the south-central part of Santa Fe County. Doctor Bigelow is the only botanist who ever visited the place, passing by it in 1853.

Abronia bigelovii. *Eriogonum effusum nudicaule.*

Gallinas River. **H4.**

A stream which rises in the southeastern part of the Pecos River National Forest and flows past Las Vegas southeastward into the Pecos River. *Ribes leptanthum veganum* was collected along its banks by Professor Cockerell.

Georgetown. Altitude, 1,940 meters. **C9.**

A now abandoned mining camp in southwestern Grant County, near Santa Rita. Dr. E. L. Greene collected here in the early eighties.

Lithospermum viride.

Gila River. **B9.**

One of the more important streams of New Mexico, having its source in the Gila National Forest in Socorro County. It is formed by the union of three branches, the East, West, and Middle forks. It flows through the northwestern part of Grant County and into Arizona. Various botanists have collected in the region, Lieutenant Emory being the first. Dr. E. L. Greene, Professor Wooton, and Mr. O. B. Metcalfe have botanized along the stream and its branches.

Androsace glandulosa.
Astragalus gilensis.
Delphinium scaposum.
Erigeron deustus.
Euphorbia neomexicana.
Hymenoclea monogyra.
Megarrhiza gilensis.
Opuntia stanlyi.
Pentstemon pauciflorus.
Senecio mogollonicus.
Senecio prionophyllus.

Gilmores Ranch. Altitude, 2,220 meters. **H8.**

A ranch in the White Mountains of Lincoln County near the post-office of Alto, on Eagle Creek. Prof. E. O. Wooton made an extensive collection here in 1897, and he and the writer collected two or three hundred numbers here in 1907. Mr. A. B. Turner collected several hundred plants at the same station in 1899. The plants that have their type localities here will all be found listed for the White Mountains.

Gray. **H8.**

A small settlement on or very near the present site of Capitan, in Lincoln County. It was in what is called the "Salow" (Salado), a wide, open "draw" or valley east of Carrizozo and north of Nogal, that drains into the Bonito. It is about 4 miles from Fort Stanton.

Argemone squarrosa.
Coleosanthus nepetaefolius..
Gutierrezia juncea.
Gutierrezia linearis.
Ionoxalis caerulea.
Lesquerella valida.

Hanover Hills. **C9.**

A term applied, evidently, to hills or low mountains in the vicinity of Hanover, a small mining camp near Santa Rita. *Hymenoxys olivacea* was collected here by Miss A. I. Mulford.

Harrisons Ranch. Altitude, 2,120 meters. **H4.**

The ranch thus referred to is on the west bank of the Pecos River, about three-fourths of a mile below the village of Pecos. The writer gathered several hundred numbers here in August of 1908. Professor Cockerell has collected in the vicinity as well.

Ratibida tagetes cinerea.

Harveys Ranch. Altitude, 2,880 meters. **H4.**

In the Las Vegas Mountains, in the southeastern part of the Pecos River National Forest in San Miguel County. Professor Cockerell visited the place several times; Prof. F. H. Snow and Professor Dyche of Kansas University have collected here; and the writer collected about a hundred numbers at this station in August, 1908.

Calochortus gunnisonii perpulcher. *Sidalcea candida tincta.*

Hillsboro. Altitude, 1,530 meters. **D9.**

A small town in the western part of Sierra County, of which it is the county seat. Mr. O. B. Metcalfe collected here in 1904 and 1905.

Evolvulus oreophilus.

Hurrah Creek. **J5.**

A small stream in the northern part of Guadalupe County visited by Doctor Bigelow on September 24 and 25, 1853. The name is not to be found on any recent map. In the report of Whipple's expedition the altitude of the camp here is given as 5,047 feet (1,510 meters).

Teloxys cornuta.

Inscription Rock. Altitude, 2,170 meters. **B5.**

This, sometimes known as El Moro, is in the northwestern part of Valencia County, about 18 or 20 miles east of Zuni. It is a sandstone cliff or rock at whose base is a spring. Since it is the only watering place for miles around it has been a favorite halting place for travelers for hundreds of years. In the soft rock many of the visitors have carved their names, accompanied by various data, hence the English name. It has been visited by several botanists, Doctor Bigelow, Doctor Woodhouse, Professor Wooton, and perhaps others.

Frasera paniculata. *Opuntia brachyarthra.*
Opuntia angustata.

Iron Creek. **D9.**

A small stream in the southern end of the Black Range, a station visited by Mr. O. B. Metcalfe in 1904. It is not shown on the map.

Ionoxalis monticola. *Lappula leucantha.*

Jornada del Muerto. Altitude from 1,070 to 1,410 meters. **E9.**

The term applied to the plain lying east of the Rio Grande in Socorro, Sierra, and Dona Ana counties. The area is a sandy plain with but scanty vegetation and with no water. The name translated is "the day's journey of the dead man," and various tales are told explaining how it received this appellation, which alludes, no doubt, to the desolation of the region. The journey across this stretch of desert was much feared by the early travelers along the Rio Grande, for here they were obliged to leave the rough banks of the river and proceed without water for about ninety miles. Doctor Wislizenus was the first botanist who visited this interesting region. Prof. E. O. Wooton and others connected with the Agricultural College have collected extensively about the south end of the Jornada during the last few years. Dona Ana lies at the south end of the plain and those plants which have their type localities there might be listed here.

Asclepias arenaria.
Dalea scoparia.
Fouquieria splendens.

Kingston. Altitude, 1,950 meters. **D9.**

A mining camp in the Gila National Forest in western Sierra County. Mr. O. B. Metcalfe made this his headquarters in 1904 and 1905 in making his Black Range collection.

Androsace platysepala.
Argemone pleiacantha.
Ditaxis cyanophylla.
Hedeoma pulchella.
Malvastrum digitatum.
Sicyos ampelophyllus.
Sphaeralcea tripartita.

Laguna. Altitude, 1,740 meters. **D5.**

One of the oldest, largest, and best known of the southwestern Indian pueblos, in the northeastern part of Valencia County, near the Santa Fe Railroad. Mr. and Mrs. J. G. Lemmon seem to have collected about the village.

Talinum brachypodum.

Laguna Colorado. **J5.**

In the southern part of San Miguel County, visited by Bigelow on September 22, 1853. The name seems to have been applied to a small stream in this vicinity.

Tricuspis mutica.

Las Cruces. Altitude, 1,160 meters. **E10.**

In the central part of Dona Ana County, of which it is the county seat, about 2 miles east of the Rio Grande. Various collectors have gathered plants here—Mr. G. R. Vasey in 1881, Dr. C. L. Herrick, Professor Wooton, and several others. The "Mesa near Las Cruces" and "Mesa west of the Organ Mountains," referred to upon numerous

labels accompanying New Mexican plants, is the sandy plain lying between Las Cruces and the Organ Mountains.

Abronia carnea.
Astragalus wootoni.
Fallugia paradoxa acuminata.
Kallstroemia brachystylis.
Phacelia intermedia.

Las Playas Springs. Altitude, about 1,420 meters. **B11.**

In the south-central part of Grant County. Wright passed by here in 1851.

Aster blepharophyllus.
Eryngium sparganophyllum.

Las Vegas. Altitude, 1,915 meters. **I4.**

One of the largest and oldest towns in New Mexico, in the northwestern part of San Miguel County. It was a station on the Santa Fe Trail, consequently Wislizenus and Fendler stopped here. Professor Cockerell, while connected with the Normal University, made collections in the vicinity.

Arenaria fendleri.
Astragalus simulans.
Drymaria tenella.
Malvastrum cockerellii.
Rosa suffulta.
Xanthium commune wootoni.

Las Vegas Hot Springs. Altitude, 2,010 meters. **H4.**

On the Gallinas River in San Miguel County, a few miles northwest of Las Vegas. Collections have been made here by G. R. Vasey, F. H. Snow, Professor Cockerell, and others.

Quercus rydbergiana.

Las Vegas Mountains. **H4.**

The term applied to the east ridge of the southern prolongation of the Sangre de Cristo Range. These mountains lie in the northwestern corner of San Miguel County, extending perhaps into Mora County. They lie just east of the Santa Fe Range. They get their name from the city of Las Vegas, which lies about 20 miles to the southeast. Their highest peaks have an elevation of about 3,450 meters. The collectors here have been the same as at Las Vegas Hot Springs, Harveys Ranch, and Las Vegas.

Acer neomexicanum.
Aragallus pinetorum veganus.
Primula angustifolia helenae.
Pseudocymopterus montanus multifidus.
Rhus sorbifolia.
Thelypodium vaseyi.

Llano Estacado. **M8.**

This, or the English equivalent, Staked Plains, is the name given to the high plateau of eastern New Mexico and northwestern Texas. The region is thus referred to by Doctor Bigelow. Most of his plants reported from the Llano Estacado were Texan. Pope passed over the plateau, but his plants, like Bigelow's, were collected principally in Texas.

Pentstemon fendleri.
Phacelia popei.

Luna. Altitude, 2,250 meters. **A7.**

In the western part of Socorro County, near the Arizona line. Professor Wooton has visited the place once or twice.

Carex agrostoides.

Mangas Springs. **B9.**

Or Mangas, a small settlement in the northern part of Grant County, northwest of Silver City. Mr. O. B. Metcalfe collected several hundred numbers in the vicinity in the summer of 1903, and his father, Mr. J. K. Metcalfe, has forwarded plants from this locality to the Department of Agriculture at different times. Two other botanists, Professor Wooton and Mr. J. G. Smith, have visited the place.

Allionia gracillima filifolia.
Bromus porteri frondosus.
Cedronella rupestris.
Hoffmanseggia falcaria rusbyi.
Hymenoxys chrysanthemoides juxta.
Lepidium intermedium pubescens.
Sphaeralcea leiocarpa.

Mescalero Agency. Altitude, 1,940 meters. **G9.**

The agency of the Mescalero Apache Reservation in northeastern Otero County. The agency buildings are near Tularosa Creek, in the eastern part of the reservation, and the post-office here is known as Mescalero. Part of Professor Wooton's White Mountains plants collected in 1897 were gathered here, and he has collected in the vicinity at other times.

Berberis haematocarpa.
Lepidium eastwoodiae.
Rosa mirifica.
Verbena perennis.

Mesilla. Altitude, 1,155 meters. **E10.**

An old Mexican town in Dona Ana County in the Rio Grande Valley, 2 or 3 miles southwest of Las Cruces. Part of Professor Wooton's 1897 collection was gathered here and several others have collected at the same station.

Abronia torreyi.
Erigeron arenarius.
Schmaltzia leiocarpa.
Sphaeralcea lobata.

Mesilla Park. Altitude, 1,160 meters. **E10.**

A station on the Santa Fe Railroad in Dona Ana County, 3 miles south of Las Cruces. The Agricultural College, which has been the headquarters for practically all the botanical work done in New Mexico during the last twenty years, is located a little less than a mile to the east. Professors Wooton and Cockerell have collected the types of the following plants here:

Cryptanthe dicarpa.
Fallugia micrantha.
Sophia andrenarum
Sophia andrenarum osmiarum.
Sophia halictorum.
Sophia ochroleuca.

Mesilla Valley. **E10.**

That part of the Rio Grande Valley lying within Dona Ana County is designated thus. All those plants having their type localities at Mesilla, Mesilla Park, Las Cruces, or in the valley near Dona Ana might be listed here.

Mimbres Mountains and River. **C9 and 10.**

The Mimbres Mountains lie just south of the Black Range in the eastern part of Grant County. The river of the same name rises in the southern end of the Black Range and flows southward through eastern Grant and northern Luna counties until it finally is lost in the sand. The region was visited by Lieutenant Emory in 1847, later by Thurber, Bigelow, and Wright, and in more recent years by most of those who have botanized in southwestern New Mexico.

Alnus oblongifolia.
Asclepias involucrata.
Delphinium scopulorum.
Robinia neomexicana.
Salvia henryi.
Urtica gracilenta.

Mogollon Mountains. **B8.**

An extensive range lying in southwestern Socorro County and included within the Gila National Forest. It contains the headwaters of the Gila River. Mr. O. B. Metcalfe collected extensively in the range in the summer of 1903. Doctor Greene and Dr. H. H. Rusby collected here in the early eighties, and Professor Wooton has visited the range several times.

Astragalus mogollonicus.
Ceanothus mogollonicus.
Cerasus crenulata.
Crataegus wootoniana.
Dalea urceolata.
Disaccanthus mogollonicus.
Draba mogollonica.
Draba pallida.
Erigeron rusbyi.
Gentiana rusbyi.
Hieracium brevipilum.
Hieracium rusbyi.
Hymenopappus integer.
Pedicularis angustissima.
Pedicularis mogollonica.
Potentilla subviscosa.
Primula rusbyi.
Rhamnus betulaefolia.
Ribes mogollonicum.
Senecio cardamine.
Senecio cynthioides.
Senecio mogollonicus.
Senecio prionophyllus.
Senecio rusbyi.
Zygadenus porrifolius.

Mora River. **J3.**

A stream in the southern part of Mora County is the one referred to in this paper. There is another of the same name not far distant in the Pecos River National Forest, but the two, although in the same general region, flow in different directions into different streams. Fendler collected the following plants here:

Amauria dissecta.
Clavigera brachyphylla.
Geranium fremontii.

Nutt. Altitude, 1,410 meters. **D10.**

A station on the Santa Fe Railroad in the extreme northeastern corner of Luna County. Mr. O. B. Metcalfe visited the locality in the spring of 1905.

Phacelia similis.

Ocaté Creek. **I3.**

A small stream in the northern part of Mora County, visited by Wislizenus and Fendler.

Aster fendleri.

Ojo Caliente. **A5.**

A small settlement on the Zuni Reservation in the extreme northwestern corner of Valencia County. Ojo Caliente is Spanish for Hot Spring, and there are many such springs in New Mexico known by this name. The one near Zuni is the one referred to in the present paper. Professor Wooton seems to be the only botanist who has collected here.

Tripterocalyx wootonii.

Ojo de Gavilan. **A11.**

Or Hawk Spring, in central Grant County, visited by Wright in 1851.

Anoda pentaschista. *Machaeranthera tanacetifolia humilis.*

Ojo del Muerto. **E9.**

Wislizenus speaks of this as a place upon the Jornada del Muerto where water was sometimes found. He collected here the type of *Sphaeralcea incana dissecta.*

Ojo de Vaca. Altitude, 1,500 meters. **C10.**

Or Cow Spring, in the extreme northwestern corner of Luna County, visited by Wright in 1851.

Astragalus vaccarum.

Olla.

Formerly a Mexican settlement somewhere near the upper end of the Jornada del Muerto. Wislizenus uses the locality on some of his labels. This, like more than one of the place names used by Wislizenus on his labels, is not mentioned in his journal.

Larrea glutinosa.

Organ Mountains. Altitude, 2,695 meters. **F10.**

A small range of jagged peaks, running north and south in the southern part of Dona Ana County, about 13 miles east of the Rio Grande. The range contains the steepest and roughest peaks to be found in New Mexico. Both Bigelow and Wright collected here, but they apparently obtained only a few plants. Parke's expedition

visited the range but seems to have gathered no botanical specimens. In 1881 Mr. G. R. Vasey visited the Organs. During the last twenty years Prof. E. O. Wooton and others from the Agricultural College have collected hundreds of plants in the mountains at all seasons of the year, so that this range is better known botanically than any other in the Territory.

Actinella vaseyi.
Allium neomexicanum.
Apocynum laurinum.
Aquilegia chrysantha.
Artemisia microcephala.
Astragalus bigelovii.
Astragalus tephrodes.
Boerhaavia organensis.
Boerhaavia viscosa oligadena.
Castilleja integra.
Castilleja organorum.
Chaetochloa grisebachii ampla.
Chrysopsis fulcrata.
Cirsium neomexicanum.
Coleosanthus melissaefolius.
Coleosanthus wootoni.
Commelina crispa.
Delphinium wootoni.
Eriogonum abertianum neomexicanum.
Erigonum polycladon crispum.
Gomphrena caespitosa.
Gutierrezia glomerella.
Heuchera leptomeria.
Laphamia cernua.
Lepidium intermedium.
Lotus mollis.
Martynia parviflora.
Mimulus rubellus.
Pentstemon linarioides.
Phlox speciosa stansburyi.
Ptelea villosula.
Rhus trilobata mollis.
Rosa stellata.
Sedum wootonii.
Selaginella rupincola.
Sicyos glaber.
Verbena confinis.

Pecos. Altitude, 2,100 meters. **H4.**

The small Mexican village of Pecos is in western San Miguel County on the Rio Pecos, a few miles above the crossing of the Santa Fe Railroad. It is near the old Santa Fe Trail and is often mentioned by travelers along that thoroughfare. About 2 miles to the south are the ruins of the old pueblo of Pecos, one of the largest pueblos in the southwest. Both Wislizenus and Fendler passed near here and collected in the vicinity. Prof. T. D. A. Cockerell and the writer have botanized here, the latter in the summer of 1908. The old pueblo gave its name to the Pecos River, which has its source in the mountains about 30 miles to the north.

Corallorhiza grabhami.
Orobanche xanthochroa.
Rosa pecosensis.
Rosa praetincta.

Pecos Baldy. Altitude, 3,810 meters. **H3.**

One of the highest peaks of the Territory, in the Pecos River National Forest, probably in the extreme southeastern corner of Rio Arriba County, although the boundaries of the several counties whose corners meet here are not very definitely located. Mr. Vernon Bailey, Mrs. W. H. Bartlett, and the writer have collected here. (This is given on the map as Cone Peak.)

Aconitum robertianum.
Thalictrum cheilanthoides.

Picacho Mountain. Altitude, 1,445 meters. **E10.**

A low isolated peak on the west side of the Rio Grande, a short distance north of Las Cruces, Dona Ana County. Professors Wooton and Cockerell have visited the peak.

Sphaeralcea martii.

Pinos Altos. Altitude, 2,055 meters. **C9.**

A small town in the northeastern part of Grant County, northeast of Silver City. Dr. E. L. Greene has collected extensively here and in the surrounding country.

Asclepias quinquedentata neomexicana.

Pinos Altos Mountains. Altitude, 2,440 meters. **C9.**

A range in the southern part of the Gila National Forest in northern Grant County. Doctor Greene gathered many plants here in the early eighties.

Artemisia franserioides.
Cerastium fastigiatum.
Draba pinetorum.
Echinospermum pinetorum.
Habenaria brevifolia.
Hieracium carneum.
Linum neomexicanum.
Oldenlandia greenei.
Phaseolus parvulus.
Polemonium filicinum.
Polemonium flavum.
Talinum confertiflorum.
Talinum humile.
Tradescantia tuberosa.

Poñi Creek. **I2.**

In Colfax County between the Rayado and the south fork of the Cimarron; visited by Fendler in 1847.

Bidens tenuisecta.
Franseria tenuifolia.

Raton. Altitude, 1,810 meters. **J1.**

A town on the Santa Fe Railroad in northern Colfax County, not far from the Colorado line. The Raton Mountains, rising to an elevation of about 2,500 meters, are on the line between Colorado and New Mexico, and unless the State in which plants from the range are gathered is mentioned one can not tell whether they are from New Mexico or Colorado. Lieutenant Abert and Mr. S. M. Tracy have collected here.

Actinella depressa pygmaea.
Poa tracyi.

Rio Blanco. **C2.**

A tributary of Cañon Largo, in eastern San Juan County, visited by Doctor Newberry.

Eriogonum lonchophyllum.

Rio Grande. **G2, D8.**

The principal stream of the southwest, flowing southward through the central part of New Mexico. Its valley has always been an important thoroughfare and several botanists traveling through New Mexico have collected along it. The following plants have been

collected in various parts of its valley; others collected in definite parts of the valley are mentioned under their proper localities. The full name of the stream is the Rio Grande del Norte, and it is sometimes referred to, especially by the earlier explorers, as the Del Norte or the Rio del Norte.

Atriplex expansa.
Baileya multiradiata.
Bartonia multiflora.
Chondrosium eriopodum.
Chondrosium foeneum.
Dieteria asteroides.
Ephedra trifurca.
Eriogonum abertianum.
Euploca grandiflora.
Fraxinus velutina.
Gilia multiflora.
Malacothrix fendleri.
Opuntia microcarpa.
Orobanche multiflora.
Petalostemon gracile oligophyllum.
Phaca picta.
Quercus emoryi.
Quercus gambelii.
Simsia scaposa.

Roswell. Altitude, 1,065 meters. **J8.**

The county seat of Chavez County, just west of the Pecos River. Mr. F. S. Earle, Prof. E. O. Wooton, and Dr. David Griffiths have collected here at various times.

Adiantum modestum.
Nyctaginia cockerellae.
Rumex ellipticus.

Round Mountain. **G9.**

A low peak on the line between the White and Sacramento mountains, in Otero County, along Tularosa Creek about halfway from Tularosa to the Mescalero Agency. Prof. E. O. Wooton has visited the place several times.

Gutierrezia filifolia.
Mentzelia perennis.

Rowe. Altitude, 2,045 meters. **H4.**

A station on the Santa Fe Railroad in the extreme western part of San Miguel County, near the Pecos River; visited by Prof. T. D. A. Cockerell.

Castilleja integra intermedia.

Ruidoso Crossing. Altitude, 2,025 meters. **H8.**

This is the crossing of Ruidoso Creek at Ruidoso store and post-office in the White Mountains, Lincoln County, at the edge of the Mescalero Apache Reservation. Professor Wooton has collected in the immediate vicinity.

Sambucus neomexicana.

Sacramento Mountains. **G10.**

A rather extensive range in the eastern part of Otero County. Its highest peaks rise to almost 3,000 meters. All plants listed for Cloudcroft and Fresnal should be included here. Professor Wooton seems to be the only botanist who has collected in the range.

Lathyrus oreophilus.
Opuntia dillei.

Sandia Mountains. Altitude, 3,120 meters. **F5.**

A range about 12 miles east of Albuquerque in northeastern Bernalillo and southeastern Sandoval counties. Doctor Bigelow gathered a considerable number of plants here in 1853, Dr. C. L. Herrick botanized here in 1897 and 1898, and Miss Charlotte Ellis in the last few years has collected a few plants about Placitas.

Achillea laxiflora.
Aster bigelovii.
Clematis bigelovii.
Gentiana bigelovii.
Opuntia cymochila montana.
Opuntia missouriensis trichophora.
Opuntia sphaerocarpa.
Pentstemon whippleanus.
Primula ellisiae.
Tetraneuris trinervata.
Vilfa tricholepis.

San Miguel. Altitude, 1,800 meters. **H4.**

A very old Mexican settlement on the Rio Pecos in southwestern San Miguel County, visited by Fendler in 1847.

Calliandra herbacea.
Hymenopappus flavescens.

Santa Antonita.

I have not been able to locate this point definitely; I find no mention of it in Whipple's Report. It must have been near Albuquerque, for Bigelow reached that settlement on October 3 and remained there until November, and we find that the plants collected at Santa Antonita were collected in October.

Actinella leptoclada.
Deweya acaulis.
Ligusticum scopulorum.

Santa Barbara. Altitude, about 1,185 meters. **E10.**

A Mexican settlement on the Rio Grande about 25 miles north of Las Cruces, visited by Wright.

Layia neomexicana.

Santa Fe. Altitude, 2,105 meters. **G4.**

The capital of New Mexico, in Santa Fe County; one of the oldest towns in the United States. This is historically the most interesting locality in the Southwest from a botanical standpoint, for here was made the first extensive collection of plants in the whole southwestern region.

The first botanical collector to visit the place, and the first botanist to collect in New Mexico, was William Gambel, who passed through Santa Fe in 1841 or 1842 on his way to California. His collections were described by Thomas Nuttall. Doctor Wislizenus, on his way to Mexico, visited the place in 1846 and collected a few plants here. But it was not until 1847 that the ground was at all thoroughly worked over in this now historic locality. August Fendler came from St. Louis over the Santa Fe trail in the autumn of 1846 and arrived at Santa Fe about October 11. His arrival was too late to allow any collecting that season, but he began early in the spring of 1847.

This is one of the few localities in New Mexico of whose spring flora we have much knowledge. In most parts of the Territory the collecting has been done during the late summer months. Fendler remained in Santa Fe until August, gathering a large amount of material from which Doctor Gray in Plantae Fendlerianae described some of our commonest southwestern species. He left Santa Fe so early in the summer that he missed many plants he might have gotten later, for plant life in the mountains of the Southwest reaches its best only after the late summer rains, in August and September. Indeed, it is of little use to go into the mountains for collecting before the first of July.

In 1897 Prof. A. A. Heller made a large collection in this same region, with Santa Fe for his headquarters, collecting again many of Fendler's species. He was at Santa Fe only during the early part of the summer and, like Fendler, missed the season for best collecting. Mr. G. R. Vasey, Mr. S. M. Tracy, Prof. T. D. A. Cockerell, and Mrs. W. H. Bartlett are later botanists who have made small collections at Santa Fe. In 1908 the writer collected some of Fendler's plants in their original localities. No one, however, has ever collected at Santa Fe late in the season, and many new species could probably be added to the flora if collecting were done at this time.

Santa Fe stands on a sandy plain which stretches westward for about 20 miles to the Rio Grande. To the east rise the high peaks of the Santa Fe Mountains, 3,600 to 3,900 meters high. The low foothills, like the mesa, are a poor collecting ground, covered as they are with juniper, cedar, piñon, cactus, and low shrubs, with but a scanty mantle of herbaceous plants. But after one has gone 10 or 12 miles eastward into the mountains he finds a luxuriant vegetation. Santa Fe Creek, or River, as it is more commonly called, is a small stream which comes down from the mountains through Santa Fe Canyon and runs through the town, furnishing its water supply. It was along this stream and on the plains about Santa Fe that Fendler got most of his plants. He went as far west as the vallev of the Rio Grande. Judging from the list given in Plantae Fendlerianae, perhaps on account of the hostility of the Indians in 1847, he did not venture more than 12 miles or so into the mountains, while if he had gone farther he would have found hundreds of plants not in his collection. Fifteen or 20 miles away he would have found a subalpine flora that would have been rich in plants then undescribed.

Those plants that have their type localities at Santa Fe or in the vicinity, the most of them first collected by Fendler, are as follows:

Abronia fendleri.
Actinella argentea.
Actinella richardsonii floribunda.
Allionia diffusa.
Amaranthus bracteosus.
Aplopappus spinulosus canescens.
Arabis gracilenta.
Arabis holboellii fendleri.
Aragallus pinetorum.
Archemora fendleri.

Argemone hispida.
Aristida fendleriana.
Aristida longiseta.
Astragalus cyaneus.
Astragalus diphysus.
Astragalus diphysus albiflorus.
Astragalus feensis.
Berberis fendleri.
Brickellia fendleri.
Bulbostylis annua.
Calycodon montanum.
Cardamine cordifolia.
Ceanothus fendleri.
Cheilanthes fendleri.
Chenopodium leptophyllum oblongifolium.
Cirsium ochrocentrum.
Corispermum hyssopifolium microcarpum.
Corydalis montana.
Crepis ambigua.
Cymopterus fendleri.
Dieteria gracilis.
Diplopappus ericoides hirtella.
Dodecatheon radicatum.
Draba aurea stylosa.
Draba helleriana.
Draba neomexicana.
Draba neomexicana robusta.
Drymaria sperguloides.
Echinocereus fendleri.
Epilobium fendleri.
Epilobium novomexicanum.
Erigeron canus.
Erigeron cinereus.
Erigeron flagellaris.
Erigeron pulcherrimus.
Erigeron wootonii.
Eriogonum lachnogynum.
Eriogonum microthecum fendlerianum.
Euphorbia fendleri.
Euphorbia montana gracilior.
Forestiera neomexicana
Fragaria bracteata.
Galium asperrimum.
Galium fendleri.
Geranium atropurpureum.
Hedeoma ciliata.
Heuchera flavescens.
Hieracium fendleri.
Holodiscus australis.
Hydrophyllum occidentale fendleri.
Krynitzkia fendleri.
Lepidium alyssoides.
Lesquerella alpina intermedia.
Linum australe.
Linum rigidum puberulum.
Lupinus decumbens argophyllus.
Lupinus helleri.
Macrorhynchus purpureus.
Mamillaria papyracantha.
Mentzelia parviflora.
Mertensia pratensis.
Monarda pectinata.
Nasturtium sphaerocarpum.
Notholaena fendleri.
Oenothera albicaulis runcinata.
Oenothera eximia.
Oenothera fendleri.
Oenothera pinnatifida integrifolia.
Opuntia phaeacantha.
Pedicularis fluviatilis.
Phaca fendleri.
Phaca gracilenta.
Phaca macrocarpa.
Philadelphus microphyllus.
Phlox nana.
Phoradendron juniperinum.
Physalis fendleri.
Physalis neomexicana.
Pleopogon setosum.
Polygonum longistylum.
Potentilla arachnoidea.
Potentilla crinita.
Potentilla diffusa.
Potentilla ovalis.
Potentilla propinqua.
Quercus undulata obtusifolia.
Quercus undulata pedunculata.
Rosa fendleri.
Rubus nutkanus parvifolius.
Sambucus melanocarpa.
Schkuhria neomexicana.
Sedum cockerellii.
Selaginella rupestris fendleri.
Senecio fendleri.
Senecio sanguisorboides.
Sidalcea candida.
Sidalcea neomexicana.
Sisymbrium incisum.
Sorbus scopulina.
Sphaeralcea fendleri.
Stipa scribneri.
Streptanthus linearifolius.
Streptanthus micranthus.

Thaspium montanum.
Thelesperma formosum
Thlaspi fendleri.
Townsendia eximia.
Townsendia fendleri.
Vesicaria fendleri.
Viola neomexicana

Santa Rita. Altitude, 1,900 meters. C9.

A mining camp in Grant County about 15 miles east of Silver City. This is spoken of by various writers as Santa Rita, Santa Rita del Cobre, Cobre, and the Copper Mines. Santa Rita Mountain and Coppermine Creek are near by. The settlement is a very old one, the Spaniards having mined copper here for probably more than two hundred years. Bigelow, Thurber, and Wright collected here in the early fifties, the last extensively, and from their collections Doctor Gray described many common New Mexican plants. Lieutenant Emory visited Santa Rita in 1847 and gathered a few plants in the vicinity. But little collecting has been done at Santa Rita since Wright's time. Dr. E. L. Greene collected here in 1880 and 1881, and in 1904, Mr. O. B. Metcalfe secured a very few specimens in the vicinity. Considerable collecting has been done in the mountains surrounding the locality, but not at Santa Rita itself; and the place would well repay some time spent in making a large collection, in order to add authoritative material to Wright's often scanty types.

In the report of Emory's Reconnaissance, opposite page 59, there is a drawing showing Santa Rita as it appeared at that time.

Acerates auriculata.
Adenophyllum wrightii.
Agave americana latifolia.
Amaranthus obovatus.
Amaranthus wrightii.
Amarella cobrensis.
Anoda wrightii.
Anogra neomexicana.
Arenaria saxosa.
Artemisia wrightii.
Asclepias nummularia.
Asclepias scaposa.
Asclepias wrightii.
Astragalus cobrensis.
Astragalus fallax.
Astragalus humistratus.
Bidens heterosperma.
Boerhaavia purpurascens.
Brickellia betonicaefolia.
Brickellia wrightii.
Calliandra reticulata.
Carex neomexicana.
Castilleja affinis minor.
Collomia thurberi.
Cologania longifolia.
Commelina linearis longispatha.
Conobea intermedia.
Dalea filiformis.
Dalea polygonoides.
Desmodium grahami.
Echeandia terniflora angustifolia.
Erigeron neomexicanus.
Erigeron platyphyllus.
Eriogonum densum.
Euphorbia bilobata.
Euphorbia dentata cuphosperma.
Euphorbia dioica indivisa.
Frasera venosa.
Heuchera rubescens nana.
Hosackia wrightii.
Ionoxalis grayi.
Juncus longistylis.
Lepidium thurberi.
Lithospermum cobrense.
Mamillaria wrightii.
Monnina wrightii.
Oenothera wrightii.
Onosmodium thurberi.
Oxybaphus coccineus.
Pellaea wrightiana.
Pentstemon virgatus.
Pericome caudata.

Perityle coronopifolia.
Phacelia neomexicana.
Phaseolus angustifolius tenuifolius.
Phaseolus macropoides.
Portulaca suffrutescens.
Potentilla thurberi.
Rubus neomexicanus.
Scrophularia coccinea.
Sida neomexicana.
Silene wrightii.
Stevia macella.
Symphoricarpos rotundifolius.
Thaspium montanum tenuifolium.
Verbena canescens neomexicana.

Sapello Canyon. **H3.**

The valley of the Rio Sapello or Sapello Creek which rises in the Las Vegas Range in northwestern San Miguel County and flows eastward into the Mora River. Prof. T. D. A. Cockerell has collected in the vicinity at various times.

Cypripedium veganum.

Sierra Blanca. Altitude, 3,565 meters. **G8.**

White Mountain Peak. The highest mountain in southern New Mexico, in the White Mountains, in the extreme northern part of Otero County. It is one of the best places in New Mexico for botanical collecting. The term is also, and more properly, used of the White Mountain Range as a whole, but infrequently by the English-speaking population. Professor Wooton has visited the peak several times.

Rhodiola neomexicana.

Silver City. Altitude, 1,765 meters. **C9.**

The principal town of Grant County, on a branch of the Santa Fe Railroad, in the northeastern part of the county. Dr. E. L. Greene, Dr. H. H. Rusby, Professor Wooton, and Mr. O. B. Metcalfe have collected here.

Amaranthus graecizans pubescens.
Asclepias uncialis.
Cyperus rusbyi.
Gutierrezia tenuis.
Lotus neomexicanus.
Lupinus neomexicanus.
Ptelea subvestita.

Socorro. Altitude, 1,375 meters. **E7.**

The county seat of Socorro, New Mexico's largest county, in the eastern part of the county, on the Santa Fe Railroad, near the Rio Grande. The collectors here have been Wislizenus, Lieutenant Emory, and G. R. Vasey.

Poa arida.

Sulphur Springs.

There are springs of this name and a post-office by the name of Sulphur in northeastern Sandoval County, but it is doubtful whether this is the locality referred to in the present paper. *Astragalus crescenticarpus* was collected by Mr. G. R. Vasey at a place of this name.

Tortugas Mountain. **F10.**

A low, rounded, limestone mountain standing on the mesa about 3 miles east of the Agricultural College, Dona Ana County. It is a most interesting place botanically, because its flora is quite different from that of the surrounding mesa and from that of the main part of the Organ Mountains. Professor Wooton and others connected with the Agricultural College have collected here frequently.

Linum vernale.

Truchas Peaks. Altitude, 3,982 meters. **H3.**

A group containing the highest peaks in New Mexico, in the Pecos River National Forest, on the line between Mora and Rio Arriba counties. They are the only mountains in the Territory upon which snow usually remains all summer. Professor and Mrs. T. D. A. Cockerell visited the locality in 1902 and the writer collected there in August, 1908. These peaks are one of the most interesting collecting grounds in New Mexico, and are reached without great difficulty by going up the Pecos River from the village of Pecos.

Mertensia caelestina.

Tucumcari Hills. **L5.**

A low range of hills in Quay County just east of the present town of Tucumcari, visited by Bigelow in 1853.

Opuntia davisii.

Tularosa Creek. **G9.**

There are two streams of this name in New Mexico, one in the northern part of the Gila National Forest in Socorro County flowing into the Frisco, and the other, the one referred to in this paper, in northeastern Otero County, rising between the White and Sacramento ranges and flowing down past the Mescalero Agency and the town of Tularosa out upon the plains where it disappears. Professor Wooton has collected along the stream.

Gaura neomexicana. *Lesquerella aurea.*

Valverde. **E8.**

Wislizenus, who collected here, speaks of this as "the mud walls of a deserted Mexican village" on the east bank of the Rio Grande about 30 miles below Socorro.

Dithyraea wislizeni.

White Mountains. **G8.**

An extensive range, the highest in southern New Mexico and the highest to be found anywhere in the Territory outside the Pecos River National Forest, lying in the southern part of Lincoln and the north-

eastern part of Otero counties. Prof. E. O. Wooton made a large collection in this range in the summer of 1897, visiting many parts of it. He has collected here in other years both before and since.

Agoseris graminifolia.
Allionia pinetorum.
Amaranthus viscidulus.
Amarella revoluta.
Arenaria confusa.
Aster hesperius wootonii.
Berberis haematocarpa.
Brittonastrum neomexicanum.
Carduus perennans.
Castilleja wootonii.
Chrysothamnus confinis.
Coleosanthus ambigens.
Draba patens.
Erigeron formosissimus.
Eriocarpum serratum.
Eriocarpum wootonii.
Eriogonum jamesii neomexicanum.
Gaura neomexicana.
Grindelia scabra.
Gutierrezia filifolia.
Gutierrezia longifolia.
Heuchera wootonii.
Laciniaria lancifolia.
Lepidium eastwoodiae.
Lesquerella aurea.
Mentzelia perennis.
Monarda stricta.
Philadelphus argyrocalyx.
Potentilla sierraeblancae.
Ptelea formosa.
Ptelea parvula.
Rhamnus fasciculata.
Rhodiola neomexicana.
Sambucus neomexicana.
Scrophularia montana.
Senecio canovirens.
Senecio wootonii.
Tetradymia filifolia.
Tetraneuris angustifolia.
Verbena perennis..

White Sands. **G9.**

A large area covered with dunes of pure white gypsum sand, in the western part of Otero County, 15 or 20 miles west of Alamogordo. Mr. Frederick V. Coville, Dr. D. T. MacDougal, Prof. E. O. Wooton, Prof. T. D. A. Cockerell, and the writer have collected here. The place is one of great interest for the botanist. Little grows upon the dunes, but in depressions among them vegetation is more abundant, and about the edge of the area there is a good growth of shrubbery and herbaceous plants, some of them ones which have been found nowhere else.

Abronia angustifolia.
Andropogon neomexicanus.
Bigelovia graveolens appendiculata.
Conanthus carnosus.
Oenothera albicaulis gypsophila.
Oenothera tubicula filifolia.
Selinocarpus lanceolatus.
Sporobolus giganteus.
Wootonia parviflora.

Winsors Ranch. Altitude, 2,520 meters. **H3.**

In San Miguel County, on the Pecos River, about 20 miles above the town of Pecos and about 3 miles above the mouth of the Mora River. The writer collected about eight hundred numbers in the vicinity in the summer of 1908. Messrs. Maltby and Coghill, of the University of New Mexico, collected here in 1897, and Mrs. W. H. Bartlett has sent to the Agricultural College several hundred plants gathered by herself in this same region.

Castilleja inconstans.
Erigeron pecosensis.

Wolf Creek. **I3.**

A small stream flowing into the Mora River in the southern part of Mora County. Wislizenus crossed it in 1846.

Echinocereus triglochidiatus.
Echinocereus viridiflorus.
Geranium pentagynum.

Zuni. **A5.**

One of the best known and the largest of the New Mexican pueblos now inhabited, in the extreme southwestern corner of McKinley County. Doctors Woodhouse and Bigelow both collected here. Professor Wooton has visited the region two or three times. The Zuni River flows past the pueblo, and the Zuni Mountains are near by.

Aster woodhousei.
Cereus hexaedrus.
Eriogonum alatum.
Eriogonum effusum leptophyllum.
Eriogonum orthocladon.
Juniperus pachyphloea.
Monarda punctata humilis.
Opuntia stenochila.
Opuntia whipplei.
Stachys rothrockii.
Tetraneuris ivesiana.
Tripterocalyx wootonii.

SPECIES DESCRIBED FROM UNKNOWN POINTS IN NEW MEXICO.

The following plants have their type localities in New Mexico, but they can not be referred to any definite part of the Territory:

Acalypha neomexicana.
Antennaria marginata.
Aristida subuniflora.
Aster ericaefolius tenuis.
Astragalus rothrockii.
Bigelovia graveolens latisquamea.
Brickellia rusbyi.
Carpochaete bigelovii.
Cedronella cana lanceolata.
Dalea wislizeni sessilis.
Drymaria fendleri.
Eritrichium glomeratum hispidissimum.
Galium acutissimum.
Galium brandegei.
Gilia rigidula acerosa.
Hedeoma piperita oblongifolia.
Heuchera novomexicana.
Heuchera sitgreavesii.
Hymenopappus robustus.
Juglans rupestris.
Lathyrus palustris graminifolius.
Leucelene ericoides serotina.
Mamillaria vivipara radiosa borealis.
Mamillaria vivipara radiosa neomexicana.
Margaranthus purpurascens.
Muhlenbergia acuminata.
Muhlenbergia neomexicana.
Opuntia arborescens.
Opuntia hystricina.
Phacelia caerulea.
Poa bigelovii.
Schmaltzia emoryi.
Senecio neomexicanus.
Sphaeralcea emoryi.
Sphaeralcea incana.
Thalictrum fendleri polycarpum.
Tragia stylaris.
Uropappus pruinosus.
Vicia leucophaea.
Wedelia incarnata anodonta.

EXPLANATION OF THE MAPS.

The two maps of the Territory of New Mexico used here are for the most part self-explanatory. The colored folded map is based upon one recently published in the Annual Report of the Governor of New Mexico. There have been added to it a few stations not appearing

upon the original. In addition, all the localities from which new plants have been described are conspicuously marked—towns, peaks, etc., with red dots, and streams and mountain ranges with red lines directly underneath their names. Several places mentioned in the list of species will not be found upon the map, because it has been impossible to locate them definitely enough for insertion. The letters and numbers following each name in the list of localities will enable one to locate readily any of the type stations upon the map.

The relief map which appears as plate 21 was originally published in Bulletin 66 of the New Mexico Agricultural Experiment Station. It has also been used in Bulletin 215 of the Office of Experiment Stations, U. S. Department of Agriculture. It is reproduced here because it shows much better than the other the relief features of the Territory which are important not only for the study of the plant geography of New Mexico but for the location of certain type localities as well.

SYSTEMATIC LIST OF PLANTS.

POLYPODIACEAE.

Adiantum modestum Underw. Bull. Torrey Club **28:** 46. 1901.
"Roswell. Abundant on rocks and grassy points overhanging the water of North Spring River," August 3, 1900, *F. S. Earle* 261.

Cheilanthes fendleri Hook. Sp. Fil. **2:** 103. 1858.
"New Mexico," *Fendler* 1015 in 1847.
Collected somewhere about Santa Fe. This fern is not uncommon in this region; about rocks in rather dry places.

Notholaena fendleri Kunze, Farnkr. **2:** 87. *pl. 136.* 1851.
"In Neu-Mexico, ohne näheren Fund- und Standort," *Fendler* 1017a in 1847.
Very rare in northern New Mexico, apparently.

Pellaea wrightiana Hook. Sp. Fil. **2:** 142. 1858.
"New Mexico," *Wright* 2130 in 1851.
This number of Wright's according to information kindly furnished by the Gray Herbarium, was collected on "mountains around the Cobre. On rocky ledges, October 20."

SELAGINELLACEAE.

Selaginella rupestris fendleri Underw. Bull. Torrey Club **25:** 127. 1898.
New Mexico, *Fendler* 1024 in 1847.

Selaginella rupincola Underw. Bull. Torrey Club **25:** 129. 1898.
"On perpendicular rocks, Organ Mountains," July 10, 1897, *E. O. Wooton.*
Very abundant in this locality, along with several other members of the genus.

PINACEAE.

Pinus brachyptera Engelm. in Wisliz. Mem. North. Mex. 89. 1848.
=*Pinus scopulorum* (Engelm.) Lemmon.
"Mountains of New Mexico," Wislizenus in 1846.

Pinus edulis Engelm. in Wisliz. Mem. North. Mex. 88. 1848.
"From the Cimarron to Santa Fe," *Wislizenus* in 1846.
In his journal for June 22 Doctor Wislizenus says: "On Ocaté Creek there are some pines, the first we have seen close to the road." These may have been *P. brachyptera*, but were probably *P. edulis*, for the latter occurs at lower levels and would be the the first pine met with in most places. At any rate the tree was not found farther to the north and east than this, and may have been collected around Santa Fe, where it is exceedingly abundant on the lower hills.

Pinus engelmanni Torr. Pac. R. Rep. **4:** 141. 1856.
Proposed as a new name for *P. brachyptera* because Doctor Torrey considered the latter name inappropriate.

JUNIPERACEAE.

Juniperus megalocarpa Sudworth, Forestry & Irrigation **13:** 307. 1907.
"Approximately in section 11 or 14, township 9 south, range 20 west, of the Gila National Forest, N. Mex. The location is midway between the towns of Alma and Frisco, and about three miles above the 'Widow Kelley's Ranch,' on the San Francisco River." Collected by W. R. Mattoon, September 22, 1906.

Juniperus pachyphloea Torr. Pac. R. Rep. **4:** 142. 1856.
"On the Zuni Mountains," *Dr. S. W. Woodhouse* in 1852.

EPHEDRACEAE.

Ephedra trifurca Torr. in Emory, Mil. Recon. 152. 1848.
"Between the Del Norte and the Gila," *Emory* in 1847.

POACEAE.

Andropogon neomexicanus Nash, Bull. Torrey Club **25:** 83. 1898.
"On the White Sands," August 26, 1897, *E. O. Wooton.*

Aristida fendleriana Steud. Syn. Pl. Glum. **1:** 420. 1855.
"New Mexico," *Fendler* 973 in 1847.

Aristida longiseta Steud. Syn. Pl. Glum. **1:** 420. 1855.
"New Mexico," *Fendler* 978 in 1847.
One of the most abundant of the grasses about Santa Fe, on the mesas and in the foothills.

Aristida subuniflora Nash in Small, Fl. Southeast. U. S. 116. 1903.
"New Mexico," *G. R. Vasey.*

Bouteloua pusilla Vasey; Scribn. Bull. Torrey Club **11:** 6. 1884.
=*Bouteloua prostrata* Lag.
"New Mexico," *G. R. Vasey.*
According to the label this was collected at "Kingman, New Mexico." So far as I know there is no town of this name in New Mexico, but there is one in Arizona, and the grass was collected in that Territory probably.

Bromus porteri frondosus Shear, U. S. Dept. Agr. Div. Agrost. Bull. **23:** 37. 1900.
"Mangas," *J. G. Smith.*

Calycodon montanum Nutt. Journ. Acad. Phila. n. ser. **1:** 186. 1848.
=*Muhlenbergia gracilis* Trin.
"In the Rocky Mountains near Santa Fe," *William Gambel.*

Chaetochloa grisebachii ampla Scribn. & Merrill, U. S. Dept. Agr. Div. Agrost. Bull. **21**: 36. 1900.
"Organ Mountains," *G. R. Vasey* in 1881.

Chondrosium eriopodum Torr. in Emory, Mil. Recon. 154. 1848.
=*Bouteloua eriopoda* Torr.
"Along the Del Norte," *Emory* in 1847.

Chondrosium foeneum Torr. in Emory, Mil. Recon. 154. *pl. 12*. 1848.
=*Bouteloua hirsuta* Lag.
"Uplands bordering the valley of the Del Norte," *Emory* in 1847.

Eragrostis fendleriana Steud. Syn. Pl. Glum. **1**: 278. 1855.
=*Poa fendleriana* (Steud.) Vasey.
"Mexico," *Fendler* 932 in 1847.
Steudel was mistaken in giving the locality as Mexico, for it should undoubtedly be New Mexico.

Muhlenbergia acuminata Vasey, Bot. Gaz. **11**: 337. 1886.
"New Mexico?," *Wright* 1993.
Miss Mary A. Day, of the Gray Herbarium, has attempted to locate the type locality of this plant from Wright's field notes, but since the label does not bear the collection number (as some of Wright's specimens in the Gray Herbarium do) it is impossible to tell just where the type was collected. There is some evidence which indicates that it may have come from Santa Rita, but it is impossible to be certain.

Muhlenbergia neomexicana Vasey, Bot. Gaz. **11**: 337. 1886.
"Rocky hills and mountain sides, New Mexico."

Panicum lachnanthum Torr. Pac. R. Rep. **3**: 20. 1857.
= *Valota saccharata* (Buckl.) Chase.
"On the Burro Mountains," *Dr. Thomas Antisell* in August, 1854.

Pleopogon setosum Nutt. Journ. Acad. Phila. n. ser. **1**: 189. 1848.
=*Lycurus phleoides* H. B. K.
"Mountains of Santa Fe," *William Gambel.*

Poa arida Vasey, Contr. Nat. Herb. **1**: 270. 1893.
"Socorro," *G. R. Vasey* in 1881.

Poa bigelovii Vasey & Scribn. Contr. Nat. Herb. **1**: 270. 1893.
"New Mexico," *Fendler* 931 in 1847.
Probably collected along Santa Fe Creek east of Santa Fe.

Poa tracyi Vasey, Contr. Nat. Herb. **1**: 276. 1893.
"On mountain sides at Raton," *S. M. Tracy.*

Sitanion caespitosum J. G. Smith, U. S. Dept. Agr. Div. Agrost. Bull. **18**: 16. 1899.
"Near Cliff," *J. G. Smith.*

Sporobolus giganteus Nash, Bull. Torrey Club **25**: 88. 1898.
"On the White Sands," August 26, 1907, *E. O. Wooton* 394.

Stipa scribneri Vasey, Bull. Torrey Club **11**: 125. 1884.
"On dry hillsides at Santa Fe."

Tricuspis mutica Torr. Pac. R. Rep. **4**: 156. 1856.
=*Triodia mutica* (Torr.) Scribn.
"Laguna Colorado," September, 1853, *Bigelow.*

Vilfa tricholepis Torr. Pac. R. Rep. **4**: 155. 1856.
Blepharoneuron tricholepis (Torr.) Nash.
"Sandia Mountains," October, 1853, *Bigelow.*

CYPERACEAE.

Carex agrostoides Mackenzie, Bull. Torrey Club **34:** 607. 1907.
"Luna, northwest of Mogollon Mountains, Socorro County," July 28, 1900, *E. O. Wooton*, altitude, 1,950 meters.

Carex neomexicana Mackenzie, Bull. Torrey Club **34:** 607. 1907.
"Santa Rita del Cobra, on the Rio Mimbras," *Bigelow*, 1547.
For Cobra read Cobre, and for Mimbras, Mimbres.

Cyperus rusbyi Britton, Bull. Torrey Club **11:** 29. 1884.
"Near Silver City," *H. H. Rusby*.

Fuirena cylindrica Bush, Rep. Mo. Bot. Gard. **16:** 91. 1904.
"In the valley of the Rio Grande, below Dona Ana," Mexican Boundary Survey.
It is possible that this locality is incorrect, for no such plant has been found anywhere in this vicinity in late years. The description of the locality was taken from the heading of the label, evidently, and, as is explained elsewhere, no reliance can be placed upon it.

COMMELINACEAE.

Commelina crispa Wooton, Bull. Torrey Club **25:** 451. 1898.
"At the base of the Organ Mountains," September 1, 1897, *E. O. Wooton* **545**, altitude 1,450 meters.
Growing in the foothills of the Organs, and down across the mesa to the west, especially under low shrubs which line the edges of the arroyos.

Commelina linearis longispatha Torr. Bot. Mex. Bound. 224. 1859.
"Near the Copper Mines," August, *Bigelow* (also collected by Wright and Fendler).

Tradescantia tuberosa Greene, Bot. Gaz. **6:** 185. 1881.
"Pinos Altos Mountains," August 23, 1880, *E. L. Greene*.

JUNCACEAE.

Juncus arizonicus Wiegand, Bull. Torrey Club **27:** 517. 1900.
"Copper Mines," *Geo. Thurber*.
Just why the specific name *arizonicus* should have been applied to this New Mexican plant is difficult to explain.

Juncus brachyphyllus Wiegand, Bull. Torrey Club **27:** 519. 1900.
For a discussion of the probable type locality of this plant see Rhodora **11:** 156. 1909.

Juncus longistylis Torr. Bot. Mex. Bound. 223. 1859.
"Near the Copper Mines," June, *Bigelow*, *Wright* 1924 in 1851.

MELANTHIACEAE.

Zygadenus porrifolius Greene, Bull. Torrey Club **8:** 123. 1881.
"Mogollon Mountains, near the summits," *E. L. Greene* in 1881.

LILIACEAE.

Allium arenicola Osterhout, Bull. Torrey Club **27:** 506. 1900.
=*Allium sabulicola* Osterhout.
"In sandy soil on the bank of the Chama River at Chama," June 9, 1899, *Geo. E. Osterhout* 2008.

Allium neomexicanum Rydb. Bull. Torrey Club **26:** 541. 1899.
"Organ Mountains," *E. O. Wooton* in 1894.

Allium sabulicola Osterhout, Bull. Torrey Club **27**: 539. 1900.
A new name for *A. arenicola.*

Brodiaea capitata var.? **pauciflora** Torr. Bot. Mex. Bound. 218. 1859.
=*Dichelostemma pauciflorum* (Torr.).
"Near the Copper Mines," *Bigelow* (other collectors and localities mentioned).

Calochortus gunnisonii perpulcher Cockerell, Bot. Gaz. **29**: 281. 1900.
"Harvey's Ranch near Las Vegas," *T. D. A. Cockerell.*

Echeandia terniflora var.? **angustifolia** Torr. Bot. Mex. Bound. 219. 1859.
"Copper Mines," *Bigelow, Wright* (other localities mentioned).

AMARYLLIDACEAE.

Agave americana var.? **latifolia** Torr. Bot. Mex. Bound. 213. 1859.
"Hills near the Copper Mines," *Emory*, and other collectors.

ORCHIDACEAE.

Corallorhiza grabhami Cockerell, Torreya **3**: 139. 1903.
In the immediate vicinity of Pecos, June 17, 18, 1903, *Dr. M. Grabham.*

Cypripedium veganum Cockerell, Proc. Biol. Soc. Washington **14**: 178. 1901.
"Sapello Canyon, Las Vegas Range," at 2,400 meters, in June, *T. D. A. Cockerell.*
A beautiful and abundant plant, common not only in the Las Vegas Range but in the Santa Fe Mountains as well. The plants often form large masses, several feet across.

Habenaria brevifolia Greene, Bot. Gaz. **6**: 218. 1881.
"Dry southward slopes of the Pinos Altos Mountains, New Mexico, in open woods of *Pinus ponderosa,*" September 14, 1880, *E. L. Greene.*
Of rare and sparing occurrence in some of the other ranges of southern New Mexico.

JUGLANDACEAE.

Juglans rupestris Engelm. in Sitgreaves, Rep. Zuni & Colo. 171. 1854.
"New Mexico," *Dr. Woodhouse* in 1852.
This may have come from Arizona, for New Mexico, in the sense used in the work cited, comprised most if not all of that Territory.

Juglans rupestris var.? **major** Engelm. in Sitgreaves, Rep. Zuni & Colo. 171. 1854.
"Western New Mexico," *Dr. Woodhouse* in 1852; "at the Copper Mines," *Bigelow.*
"Western New Mexico" is certainly Arizona.

BETULACEAE.

Alnus oblongifolia Torr. Bot. Mex. Bound. 204. 1859.
"Banks of the Mimbres and near Santa Barbara," *Wright* 1864 in 1851.

FAGACEAE.

Quercus douglassii novomexicana A. DC. Prodr. **16**^{2}: 24. 1864.
=*Quercus novomexicana* (A. DC.) Rydb.
"In Novo Mexico ad Santa Fe," *Fendler* 809, 810, and 810b, in 1847.

Quercus emoryi Torr. in Emory, Mil. Recon. 151. *pl. 9.* 1848.
"In the elevated country between the Del Norte and the Gila," *Emory* in 1847.

Quercus fendleri Liebm. Overs. Dansk. Vid. Selsk. Forh. **1854:** 170. 1854.
"Plantae Nov. Mex. Fendleri n. *805, 807.*"
Collected somewhere near Santa Fe, no doubt.

Quercus gambelii Nutt. Journ. Acad. Phila. n. ser. **1:** 179. 1848.
"On the banks of the Rio del Norte, but not abundant," *William Gambel.*

Quercus oblongifolia Torr. in Sitgreaves, Rep. Zuni & Colo. 173. 1854.
"Western New Mexico," *Dr. Woodhouse* in 1852.
This was doubtless in Arizona.

Quercus rydbergiana Cockerell, Torreya **3:** 7. 1903.
"Common at Las Vegas Hot Springs," *T. D. A. Cockerell,* at 2,100 meters.

Quercus undulata obtusifolia A. DC. Prodr. **16²:** 23. 1864.
"In Novo Mexico," *Fendler* 807 in 1847.

Quercus undulata pedunculata A. DC. Prodr. **16²:** 23. 1864.
"In montibus Novi-Mexici prope Santa Fe," *Fendler* 808 in 1847.

URTICACEAE.

Urtica gracilenta Greene, Bull. Torrey Club **8:** 122. 1881.
"Mimbres Mountains," *E. L. Greene* in May, 1877.

MORACEAE.

Humulus lupulus neomexicanus Nelson & Cockerell, Proc. Biol. Soc. Washington **16:** 45. 1903.
"Beulah (Canadian Zone)," August, 1902, *T. D. A. Cockerell.*

LORANTHACEAE.

Phoradendron juniperinum Engelm. in A. Gray, Mem. Amer. Acad. II. **4:** 58. 1849.
"Parasitic on the two kinds of shrub cedar (Juniperus) which grow on the hills and elevated plains about Santa Fe, and on no other tree," 1847, *Fendler* 281.

POLYGONACEAE.

Eriogonum abertianum Torr. in Emory, Mil. Recon. 151. 1848.
"Between the Del Norte and the Gila," *Emory* in 1847; "also found by Lieutenant Abert on the upper waters of the Arkansas."
The latter locality is in Colorado. The species is one of the most common ones in southern New Mexico, but I have seen no specimens from the northern part of the Territory.

Eriogonum abertianum neomexicanum Gandoger, Bull. Soc. Bot. Belg. **42:** 185. 1906.
"Organ Mountains," *E. O. Wooton* 427 in 1897.

Eriogonum alatum Torr. in Sitgreaves, Rep. Zuni & Colo. 168. *pl. 8.* 1854.
"On the Zuni River," September, 1852, *Dr. S. W. Woodhouse.*

Eriogonum cyclosepalum Greene, Muhlenbergia **6:** 1. 1910.
"Open plains and table lands in New Mexico."

Eriogonum densum Greene, Pittonia **3:** 17. 1896.
"Mountains of New Mexico, near Santa Rita del Cobre."

Eriogonum effusum var.? **nudicaule** Torr. Pac. R. Rep. **4:** 132. 1856.
=*Eriogonum nudicaule* (Torr.) Small.
"In pine and cedar woods, near Galisteo," *Bigelow* in 1853.

Eriogonum effusum leptophyllum Torr. in Sitgreaves, Rep. Zuni & Colo. 168. 1854.
"Rio Zuni," September, 1852, *Dr. S. W. Woodhouse.*

Eriogonum jamesii neomexicanum Gandoger, Bull. Soc. Bot. Belg. **42**: 190. 1906.
"White Mountains," *E. O. Wooton* 385 in 1897.
Collected near Blazers Mill just below the Mescalero Agency, August 6.

Eriogonum lachnogynum Torr.; Benth. in DC. Prodr. **14**: 8. 1856.
"In New Mexico," *Fendler* 765 in 1847, collected somewhere near Santa Fe, probably.

Eriogonum lonchophyllum Torr. & Gr. Proc. Amer. Acad. **8**: 173. 1870.
"On the Rio Blanco, interior of New Mexico?," *Newberry* in Macomb's expedition.

Eriogonum microthecum fendlerianum Torr. & Gr. Proc. Amer. Acad. **8**: 171. 1870.
"New Mexico," *Fendler* 767 in 1847.
Collected either about Santa Fe or in northeastern New Mexico.

Eriogonum orthocladon Torr. in Sitgreaves, Rep. Zuni & Colo. 167. *pl. 9.* 1854.
"On the Zuni and San Francisco Mountains," *Dr. S. W. Woodhouse*, August and October, 1852.
The San Francisco Mountains, of course, are in Arizona.

Eriogonum pinetorum Greene, Muhlenbergia **6**: 3. 1910.
"Black Range, Sierra County," 1904, *O. B. Metcalfe* 1327.

Eriogonum polycladon crispum Gandoger, Bull. Soc. Bot. Belg. **42**: 196. 1906.
"Organ Mountains," *E. O. Wooton* 460 in 1897.

Polygonum longistylum Small, Bull. Torrey Club **21**: 169. 1894.
"New Mexico," *Fendler* 749 in 1847.
Doubtless collected somewhere near Santa Fe.

Rumex ellipticus Greene, Pittonia **4**: 234. 1900.
"In fields and along river banks at Roswell," August 5, 1900, *F. S. Earle.*

CHENOPODIACEAE.

Atriplex expansa S. Wats. Proc. Amer. Acad. **9**: 116. 1874.
"Sandy saline places on the Del Norte."

Chenopodium leptophyllum oblongifolium S. Wats. Proc. Amer. Acad. **9**: 95. 1874.
"New Mexico," *Fendler* 717 in 1847.
In the region about Santa Fe.

Corispermum hyssopifolium microcarpum S. Wats. Proc. Amer. Acad. **9**: 123. 1874.
"New Mexico," *Fendler* 711 in 1847.

Corispermum marginale Rydb. Bull. Torrey Club **31**: 247. 1903.
"Albuquerque," *C. L. Herrick.*

Obione acanthocarpa Torr. Bot. Mex. Bound. 183. 1859.
=*Atriplex acanthocarpa* (Torr.) S. Wats.
"Plains between the Burro Mountains," September, *Bigelow;* and by other collectors in various places.

Teloxys cornuta Torr. Pac. R. Rep. **4**: 129. 1856.
=*Chenopodium cornutum* (Torr.) Benth. & Hook.
"Rocky Places, Hurrah Creek," *Bigelow* in 1853.
One of the commonest of southwestern plants, in the foothills of the mountains and up to altitudes of about 2,400 meters.

AMARANTHACEAE.

Amaranthus bracteosus Uline & Bray, Bot. Gaz. **19**: 314. 1894.
"New Mexico," *Fendler* 735 in 1847.
Of the Santa Fe region.

Amaranthus graecizans pubescens Uline & Bray, Bot. Gaz. **19**: 317. 1894.
"Silver City," *E. L. Greene* 185.

Amaranthus obovatus S. Wats. Proc. Amer. Acad. **12**: 275. 1877.
"At the Copper Mines," October, 1851, *Wright* 1748 in part.

Amaranthus viscidulus Greene, Pittonia **3**: 344. 1898.
"In the Sierra Blanca," *E. O. Wooton* in 1897.
This was collected at Gilmores Ranch on Eagle Creek in the White Mountains. It is common there, growing on banks along the creek. It has been found in other parts of the Territory as well.

Amaranthus wrightii S. Wats. Proc. Amer. Acad. **12**: 275. 1876.
"At the Copper Mines," October, 1851, *Wright* 1748 in part.

Gomphrena caespitosa Torr. Bot. Mex. Bound. 181. 1859.
"Gravelly plains near the Organ Mountains; also at the Copper Mines and near Mimbres," April and May, *Bigelow*, *Wright* 1572 (other localities mentioned).
Rather rare in the foothills of the Organs and on the surrounding plains, flowering in early spring. The plants are almost always very small, as a result of the dryness of the season at which they flower.

ALLIONIACEAE.

Abronia angustifolia Greene, Pittonia **4**: 344. 1898.
"White Sands of Dona Ana County," *E. O. Wooton* 157 in 1897.
One of the characteristic plants of the Sands, growing about their edge and even upon the dunes.

Abronia bigelovii Heimerl, Smiths. Misc. Coll. **53**: 197. 1908.
"Near Galisteo," *Bigelow* in October, 1853.
This plant has never been collected except this once, and then not in quantity.

Abronia carnea Greene, Pittonia **3**: 343. 1898.
=*Tripterocalyx cyclopterus* (A. Gray) Standley.
"At Las Cruces," *E. O. Wooton* 59 in 1897.

Abronia fendleri Standley, Contr. Nat. Herb. **12**: 324. *pl. 43*. 1909.
"At Santa Fe, New Mexico, May 19, 1847, *Fendler* 739, growing in 'moist places near fields, etc.'"
Not uncommon about Santa Fe, not only in moist places, but upon the drier mesas and hillsides.

Abronia torreyi Standley, Contr. Nat. Herb. **12**: 319. *pl. 38*. 1909.
"Mesilla, Dona Ana County, June 15, 1897," *E. O. Wooton* 11.
Very abundant upon the sandhills of the Mesilla Valley, not found upon the adobe soil.

Abronia turbinata stenophylla Heimerl, Ann. Cons. Jard. Genève **5**: 190. 1901.
The type of this is the same as that of *A. angustifolia* Greene, hence it is a synonym of that species.

Allionia diffusa Heller, Minn. Bot. Stud. **2**: 33. 1898.
"On dry gravelly hills, 10 miles west of Santa Fe," in 1897, *A. A. Heller* 3740.

Allionia gracillima filifolia Standley, Contr. Nat. Herb. **12**: 340. 1909.
"Mangas Springs," August 17, 1902, *E. O. Wooton.*

Allionia pinetorum Standley, Contr. Nat. Herb. **12**: 344. 1909.
"At Gilmore's ranch, on Eagle Creek, White Mountains, New Mexico, August, 1907, *Wooton & Standley* 3896, growing on a rather dry hillside with a southern exposure, under pine trees."

Boerhaavia organensis Standley, Contr. Nat. Herb. **12**: 385. 1909.
"In Filmore Canyon, Organ Mountains," October 23, 1904, *E. O. Wooton.*
Known only from the type locality.

Boerhaavia purpurascens A. Gray, Amer. Journ. Sci. II. **15**: 321. 1853.
"Stony hills near the copper mines of Santa Rita," *Wright* 1725 in 1851.

Boerhaavia viscosa oligadena Heimerl, Ann. Cons. Jard. Genève **5**: 189. 1901.
"Organ Mountains," 1897, *E. O. Wooton*, 421.
This widely diffused subspecies is common in the dry foothills of the Organ Mountains, extending down across the surrounding mesa, and even rarely into the valley of the Rio Grande.

Mirabilis linearis subhispida Heimerl, Ann. Cons. Jard. Genève **5**: 186. 1901.
=*Allionia linearis subhispida* (Heimerl) Standley.
"El Capitan Mountains," 1900, *F. S. Earle* 383.

Mirabilis oxybaphoides glabrata Heimerl, Ann. Cons. Jard. Genève **5**: 180. 1901.
=*Allioniella oxybaphoides glabrata* (Heimerl) Standley.
"El Capitan Mountains," 1900, *F. S. Earle* 399.

Nyctaginia cockerellae A. Nelson, Proc. Biol. Soc. Washington **16**: 29. 1903.
"Near Roswell," *Mrs. Wilmatte P. Cockerell.*

Oxybaphus coccineus Torr. Bot. Mex. Bound. 169. 1859.
=*Allionia coccinea* (Torr.) Standley.
"Hillsides, copper mines, and on the Mimbres," *Wright* 1723 in 1851. (Other collectors and localities mentioned.)

Selinocarpus lanceolatus Wooton, Bull. Torrey Club **25**: 304. 1898.
"On white soil (mostly gypsum?) just south of the White Sands," August 26, 1897, *E. O. Wooton* 389, altitude, 1,220 meters.
An interesting plant of rather limited distribution, growing along the edge of the sands, but not on the dunes.

Tripterocalyx wootonii Standley, Contr. Nat. Herb. **12**: 329. 1909.
"Near Ojo Caliente, Zuni Reservation," July 20, 1906, *E. O. Wooton;* and "on the Zuni Reservation," in 1904, *E. O. Wooton* 2820.

Wedelia incarnata anodonta Standley, Contr. Nat. Herb. **12**: 333. 1909.
=*Wedeliella incarnata anodonta* (Standley) Cockerell.
"Plains of western New Mexico," July, 1880, *H. H. Rusby* 355.

PORTULACACEAE.

Portulaca suffrutescens Engelm. Bot. Gaz. **6**: 236. 1881.
"In western New Mexico at the copper mines," *Wright* 874 in 1851. (Other localities and collectors mentioned.)

Talinum brachypodum S. Wats. Proc. Amer. Acad. **20**: 355. 1885.
"Near the Indian village Laguna," *Mr. & Mrs. J. G. Lemmon.*

Talinum calycinum Engelm. in Wisliz. Mem. North. Mex. 88. 1848.
"In sandy soil on the Cimarron," *Wislizenus* in 1846.
This may have been collected in New Mexico, but it seems doubtful. Wislizenus's party crossed the Cimarron, according to his map, in about latitude 37° 10′, longitude 102° 30′, or in Kansas. However, there are several branches of the Cimarron, some of them in New Mexico, and this Talinum may have been gotten in New Mexican territory.

Talinum confertiflorum Greene, Bull. Torrey Club **8**: 121. 1881.
"In the Pinos Altos Mountains," *E. L. Greene* in 1880.

Talinum humile Greene, Bot. Gaz. **6**: 183. 1881.
"On a rocky table-land near the southern base of the Pinos Altos Mountains," August 11, 1880, *E. L. Greene.*

SILENACEAE.

Arenaria confusa Rydb. Bull. Torrey Club **28**: 275. 1901.
"White Mountains," *E. O. Wooton* 295, August 6, 1897.
Collected at Gilmores Ranch.

Arenaria fendleri A. Gray, Mem. Amer. Acad. II. **4**: 13. 1849.
"Prairies 5 miles west of Las Vegas," August, 1847, *Fendler* 57 (not distributed).
A common species, occurring usually at rather high altitudes, in grassy meadows. It is common in the range to the west of Las Vegas, and in the Santa Fe Mountains.

Arenaria saxosa A. Gray, Smiths. Contr. Knowl. **5**: 18. 1853.
"Stony hills at the copper mines," *Wright* 865 in 1851.

Cerastium fastigiatum Greene, Pittonia **4**: 303. 1901.
"Pinos Altos Mountains," *E. L. Greene.*

Drymaria depressa Greene, Leaflets **1**: 153. 1905.
"Open glades of the Black Range," 1904, *O. B. Metcalfe* 1430, altitude, 2,900 meters.

Drymaria fendleri S. Wats. Proc. Amer. Acad. **17**: 328. 1882.
"New Mexico," 1847, *Fendler* 60 (other localities mentioned).

Drymaria sperguloides A. Gray, Mem. Amer. Acad. II. **4**: 11. 1849.
"Valley of Santa Fe Creek in the mountains, in a plain grazed by cattle and horses;" also "between Santa Fe and Pecos," August, 1847, *Fendler* 55 (not distributed).

Drymaria tenella A. Gray, Mem. Amer. Acad. II. **4**: 12. 1849.
"Shady places, in woodland in the mountain region, 8 miles west of Las Vegas," August, 1847, *Fendler* 56 (not distributed).

Silene concolor Greene, Leaflets **1**: 153. 1905.
"Black Range, New Mexico, in spruce woods at 8,000 feet," October 11, 1904, *O. B. Metcalfe* 1482.

Silene wrightii A. Gray, Smiths. Contr. Knowl. **5**: 17. 1853.
"In crevices of rocks, mountain sides near the copper mines," *Wright* 862 in 1851.

RANUNCULACEAE.

Aconitum mogollonicum Greene, Repert. Nov. Sp. Fedde **7**: 5. 1909.
"Mogollon Mountains," *O. B. Metcalfe* 518 in 1903.

Aconitum robertianum Greene, Repert. Nov. Sp. Fedde **7**: 6. 1909.
"Pecos Baldy," *Vernon Bailey.*

Aquilegia chrysantha A. Gray, Proc. Amer. Acad. **8**: 621. 1873.
A new name for *A. leptocera flava*, A. Gray.
Doctor Gray speaks of this plant grown in the Cambridge Botanical Garden as being 4 feet high or more. This size must have been due to the larger amount of water received by the plants at Cambridge, for in the type locality it is never more than 2 feet high. It grows in damp places, especially about pools of water, in the Organ Mountains, flowering throughout the summer.

Aquilegia leptocera flava A. Gray, Smiths. Contr. Knowl. **5**: 9. 1853.
=*Aquilegia chrysantha* A. Gray.
"Wet places in a ravine, Organ Mountains," *Wright* 1306 in 1851.

Clematis bigelovii Torr. Pac. R. Rep. **4**: 61. 1856.
"On the Sandia Mountains," October, 1853, *Bigelow.*

Clematis cruxflava Cockerell, Science n. ser. **10**: 898. 1899.
A name applied to a plant found "along the roadside in the town of Las Vegas," thought to have escaped from cultivation.

Clematis occidentalis albiflora Cockerell, Bot. Gaz. **29**: 281. 1900.
=*Atragene* sp.
"Beulah," *T. D. A. Cockerell.*

Delphinium amplibracteatum Wooton, Bull. Torrey Club **37**: 35. 1910.
"At the N Bar Ranch in the Mogollon Mountains," at an altitude of about 2,100 meters in open pine forest, *E. O. Wooton*, August 2, 1900.

Delphinium cockerellii A. Nelson, Bot. Gaz. **42**: 51. 1906.
"Baldy Mountains, Elizabethtown," *Mrs. O. St. John* 90.

Delphinium confertiflorum Wooton, Bull. Torrey Club **37**: 33. 1910.
"In the mountains 15 miles southeast of Patterson, New Mexico, near Culberson's Ranch, in pine forest," altitude 2,300 meters, *E. O. Wooton*, August 16, 1900.

Delphinium macrophyllum Wooton, Bull. Torrey Club **37**: 40. 1910.
"On Hillsboro Peak of the Black Range, Sierra County," altitude 3,000 meters, *O. B. Metcalfe* 1311, September 11, 1904.

Delphinium novomexicanum Wooton, Bull. Torrey Club **37**: 37. 1910.
"Near Cloudcroft, Otero County," altitude, 2,700 meters, in open coniferous forests, *E. O. Wooton*, July 31, 1899.

Delphinium sapellonis Cockerell, Bot. Gaz. **34**: 453. 1902.
"Beulah, Sapello Cañon," August 11, 1900, *T. D. A. Cockerell*, described from life.
A common plant of the Las Vegas and Santa Fe mountains, growing along the edges of streams, at altitudes of 2,250 to 2,700 meters.

Delphinium scaposum Greene, Bot. Gaz. **6**: 156. 1881.
"Hill country between the Gila and San Francisco rivers," May 25, 1880, *E. L. Greene.*

Delphinium scopulorum A. Gray, Smiths. Contr. Knowl. **5**: 9. 1853.
"Mountain ravine, near the Mimbres," *Wright* 842 in 1851.

Delphinium sierraeblancae Wooton, Bull. Torrey Club **37**: 38. 1910.
"Upper slopes of the White Mountain Peak at elevations of from 3,200 meters down to about 2,500 meters," *E. O. Wooton*, August 1, 1901.

Delphinium wootoni Rydb. Bull. Torrey Club **26**: 587. 1899.
"Organ Mountains," *E. O. Wooton* in 1893.
Infrequent in the foothills of the Organs and the surrounding plains, flowering in spring.

Ranunculus nudatus Greene, Leaflets **1**: 211. 1906.
"Burro Mountains, at 7,500 feet," June 20, 1903, *O. B. Metcalfe*.

Thalictrum cheilanthoides Greene, Leaflets **2**: 89. 1910.
"Summit of Bald Peak not far from Santa Fe, New Mexico, at 12,000 feet," July 11, 1908, *Paul C. Standley* 4324.
By "Bald Peak" is meant Pecos Baldy.

Thalictrum fendleri Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 5. 1849.
"With the last," *Actaea rubra*, the locality for which is "damp, shady places in the mountains around Santa Fe," *Fendler* 13 in 1847.
A common species of the Santa Fe Mountains, most common in shady places along the banks of streams. Fendler found it probably along Santa Fe Creek.

Thalictrum fendleri polycarpum Torr. Pac. R. Rep. **4**: 61. 1856.
= *Thalictrum polycarpum* (Torr.) S. Wats.
"Mountain ravines, New Mexico," October, *Bigelow;* also collected in California.

BERBERIDACEAE.

Berberis fendleri A. Gray, Mem. Amer. Acad. II. **4**: 5. 1849.
"Santa Fe Creek, at the foot of steep and rocky banks, near the water," *Fendler* 15 in 1847.
A common shrub on hillsides, from 2,250 meters or less up to about 2,700 meters.

Berberis haematocarpa Wooton, Bull. Torrey Club **25**: 304. 1898.
"At the Mescalero Agency in the White Mountains," August 23, 1897, *E. O. Wooton* 376, at 1,900 meters; also in the Organ Mountains.

PAPAVERACEAE.

Argemone hispida A. Gray, Mem. Amer. Acad. II. **4**: 5. 1849.
"Low, sandy places around Santa Fe," *Fendler* 16 in 1847.

Argemone pleiacantha Greene, Repert. Nov. Sp. Fedde **6**: 161. 1908.
"Mountains near Kingston, in gravelly soil," *O. B. Metcalfe* in 1904.

Argemone squarrosa Greene, Pittonia **4**: 68. 1899.
"Southern New Mexico," *Miss Josephine Skehan*, near Gray, August, 1898.

FUMARIACEAE.

Corydalis montana Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 6. 1849.
= *Capnoides montanum* (Engelm.) Britton.
"Rocks, Santa Fe Creek," *Fendler* in 1847.
Of frequent occurrence, on hillsides, or more commonly along the edge of streams.

BRASSICACEAE.

Arabis formosa Greene, Pittonia **4:** 198. 1900.
"Hills about Aztec," April 28, 1899, *C. F. Baker.*

Arabis gracilenta Greene, Pittonia **4:** 194. 1900.
"Vicinity of Santa Fe," *A. A. Heller* in 1897.

Arabis holboellii fendleri S. Wats. in A. Gray, Syn. Fl. **1**[1]: 164. 1895.
=*A. fendleri* (S. Wats.) Greene.
"New Mexico," 1847, *Fendler* 27 (other localities mentioned).

Cardamine cordifolia A. Gray, Mem. Amer. Acad. II. **4:** 8. 1849.
"Margin of Santa Fe Creek, in the mountains," May and June, 1847, *Fendler* 28.
Common in wet places in the Santa Fe Mountains, chiefly along the edges of streams, from 2,250 or 2,400 meters up to 3,600 meters.

Cheiranthus aridus Greene, Pittonia **4:** 198. 1900.
=*Erysimum bakeri* (Greene) Rydb., according to Rydberg.
"On dry hills among nut pines and cedars at Aztec," April 27, 1899, *C. F. Baker.*

Disaccanthus luteus Greene, Leaflets **1:** 225. 1906.
"Black Range," *O. B. Metcalfe* in 1905.

Disaccanthus mogollonicus Greene, Leaflets **1:** 225. 1906.
"Among foothills of the Mogollones," March 30, 1881, *E. L. Greene.*

Dithyraea wislizeni Engelm. in Wisliz. Mem. North. Mex. 96. 1848.
"In sandy soil near Valverde and Fray Cristobal," *Wislizenus* in 1846.
Abundant upon the sandy mesas of southern New Mexico. The type locality is just at the upper end of the Jornada del Muerto, and this is one of the common flowers of early spring and summer upon this sandy plain.

Draba aurea stylosa A. Gray, Amer. Journ. Sci. II. **33:** 243.
"Near Santa Fe," *Fendler* in 1847.

Draba helleriana Greene, Pittonia **4:** 17. 1899.
"In cañons among foothills of New Mexican mountains at elevations of 7,000 to 8,000 feet," *A. A. Heller* 3669 in 1897; and *E. O. Wooton* 275 in 1897.
Professor Heller's specimens were collected somewhere in the region about Santa Fe. There the plant is common, growing on hillsides east of Santa Fe, under pine trees, on rather dry slopes. It flowers about the middle of July.

Draba mogollonica Greene, Bot. Gaz. **6:** 157. 1881.
"Northward slopes of the Mogollon Mountains," April 18, 1880, *E. L. Greene.*

Draba neomexicana Greene, Pittonia **4:** 18. 1899.
"Mountains back of Santa Fe," *Fendler* 43 in 1847, in part.

Draba neomexicana robusta Heller, Bull. Torrey Club **26:** 626. 1899.
New Mexico, *Fendler* 43 of 1847, in part.
This must have been collected in the mountains east of Santa Fe.

Draba pallida Heller, Bull. Torrey Club **26:** 626. 1899.
"Shady hillsides, Mogollon Mountains," August, 1881, *H. H. Rusby* 18.

Draba patens Greene, Bull. Torrey Club **26:** 624. 1899.
'White Mountains," *E. O. Wooton* 275, August 4, 1897.
Exact locality, Gilmores Ranch.

Draba pinetorum Greene, Pittonia **4**: 18. 1899.
"In pine woods along the summit of the Pinos Altos Mountains," September 6, 1880, *E. L. Greene.*

Lepidium alyssoides A. Gray, Mem. Amer. Acad. II. **4**: 10. 1849.
"Mountain valleys, from Santa Fe eastward to Rabbits Ear Creek," August, 1847, *Fendler* 46.

Lepidium eastwoodiae Wooton, Bull. Torrey Club **25**: 258. 1898.
"Mescalero Agency in the White Mountains," July 26, 1897, *E. O. Wooton* 672, altitude 1,900 meters.

Lepidium intermedium A. Gray, Smiths. Contr. Knowl. **5**: 15. 1853.
=*Lepidium medium* Greene.
"Ravines of the Organ Mountains," *Wright* 1320 in 1851.
Occurring in this locality on the foothills and on dry slopes, flowering in early spring.

Lepidium intermedium pubescens Greene, Bot. Gaz. **5**: 157. 1881.
"Mangos Springs," May 31, 1880, *E. L. Greene*, "in marshy ground."
This should read Mangas Springs.

Lepidium thurberi Wooton, Bull. Torrey Club **25**: 259. 1898.
"First collected by Dr. Geo. Thurber, at the Copper mines, near what is now Silver City," in 1851, no. 323.

Lesquerella alpina intermedia S. Wats. Proc. Amer. Acad. **23**: 251. 1888.
"On the lesser hills west of Santa Fe."

Lesquerella aurea Wooton, Bull. Torrey Club **25**: 260. 1898.
"On the south fork of Tularosa Creek, 3 miles east of the Mescalero Agency in the White Mountains," July 30, 1897, *E. O. Wooton* 245, altitude 1,950 meters.

Lesquerella valida Greene, Pittonia **4**: 68. 1899.
"At Gray," *Miss Josephine Skehan* in 1898.

Nasturtium sphaerocarpum A. Gray, Mem. Amer. Acad. II. **4**: 6. 1849.
=*Radicula sphaerocarpa* (A. Gray) Greene.
"Low places along Santa Fe Creek," *Fendler* 21 in 1847.
In damp places in the mountains east of Santa Fe, up to 3,000 meters.

Sisymbrium incisum Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 8. 1849.
=*Sophia incisa* (Engelm.) Greene.
"Banks of streams in New Mexico; Santa Fe Creek and Mora River," June to August, 1847, *Fendler* 29, 30, and 31.
Of wide distribution in the mountains of the southwest; plentiful about Santa Fe along the edges of the streams in shade, but growing as far down as the town, along the edge of the creek.

Sophia andrenarum Cockerell, Bull. Torrey Club **28**: 48. 1901.
"Mesilla Park," *T. D. A. Cockerell.*

Sophia andrenarum osmiarum Cockerell, Bull. Torrey Club **28**: 48. 1901.
"Mesilla Park," *T. D. A. Cockerell.*

Sophia halictorum Cockerell, Bull. Torrey Club **25**: 460. 1898.
"Mesilla Park, New Mexico, in the zone of mesquite and *Atriplex canescens*, flowering in March and April and very abundant," *T. D. A. Cockerell.*
All three of these Sophias as well as *S. ochroleuca* are exceedingly abundant about the Agricultural College, where they were first collected. The four forms grow side by side and are the commonest spring plants in the locality, flowering from February until June.

Sophia obtusa Greene, Leaflets **1**: 96. 1904.
"In the Black Range," *O. B. Metcalfe* 1074 in 1904.
A rather common species of west-central New Mexico, judging from material in the herbarium of the New Mexico Agricultural College.

Sophia ochroleuca Wooton, Bull. Torrey Club **25**: 455. 1898.
"Mesilla Park," April, 1897, *J. D. Tinsley*.

Sophia serrata Greene, Leaflets **1**: 96. 1904.
"Same region as the above" (*S. obtusa*).

Streptanthus linearifolius A. Gray, Mem. Amer. Acad. II. **4**: 7. 1849.
=*Thelypodium linearifolium* (A. Gray) S. Wats.
"Mountainous regions from Santa Fe to Las Vegas, on sunny rocks," July and August, 1847, *Fendler* 24.
A well-distributed species, common about Santa Fe, growing most frequently in crevices of rocks.

Streptanthus micranthus A. Gray, Mem. Amer. Acad. II. **4**: 7. 1849.
=*Heterothrix micranthus* (A. Gray) Rydb.
"Margins of Santa Fe Creek," July, 1847, *Fendler* 23.
As common as *Thelypodium linearifolium*, and growing in similar situations.

Thelypodium vaseyi Coulter, Contr. Nat. Herb. **1**: 30. 1890.
"Mountains west of Las Vegas," *G. R. Vasey*.
A common plant at higher elevations in the Las Vegas Mountains, usually growing in open meadows at about 3,000 meters. In spite of its small flowers it is a very showy plant when growing in large masses, and is one of the most conspicuous plants of the region.

Thlaspi fendleri A. Gray, Smiths. Contr. Knowl. **5**: 14. 1853.
By inference, "Santa Fe Creek, in the mountains," *Fendler* in 1847.
Frequent at 2,100 to 2,700 meters or more, on rather dry slopes under pine trees.

Thysanocarpus amplectens Greene, Pittonia **3**: 87. 1896.
"In southwestern New Mexico," *E. L. Greene*, April 16, 1880.

Vesicaria fendleri A. Gray, Mem. Amer. Acad. II. **4**: 9. 1849.
=*Lesquerella fendleri* (A. Gray) S. Wats.
"On the smaller hills around Santa Fe," May 2, 1847, *Fendler* 40 (not distributed).

CRASSULACEAE.

Rhodiola neomexicana Britton, Bull. N. Y. Bot. Gard. **3**: 38. 1903.
"White Mountain Peak," *E. O. Wooton*.

Sedum cockerellii Britton, Bull. N. Y. Bot. Gard. **3**: 41. 1903.
"Tuerto Mountain, east of Santa Fe," *T. D. A. Cockerell*.

Sedum wootonii Britton, Bull. N. Y. Bot. Gard. **3**: 44. 1903.
"Organ Mountains," *E. O. Wooton*.

SAXIFRAGACEAE.

Heuchera flavescens Rydb. N. Amer. Fl. **22**[2]: 114. 1905.
"Santa Fe Canyon, 9 miles east of Santa Fe," *A. A. Heller* in 1897.

Heuchera leptomeria Greene, Leaflets **1**: 112. 1905.
"Organ Mountains," September 17, 1893, *E. O. Wooton*.
Common in the Organs at higher altitudes, growing in moist soil on shady slopes.

Heuchera novomexicana Wheelock, Bull. Torrey Club **17:** 200. 1890.
"New Mexico."

Heuchera rubescens nana A. Gray, Smiths. Contr. Knowl. **5:** 64. 1853.
=*Heuchera nana* (A. Gray) Rydb.
"With the preceding," *H. rubescens* from "crevices of rocks, on mountains near the copper mines," August, 1851, *Wright.*

Heuchera sitgreavesii Rydb. N. Amer. Fl. **22**[2]**:** 110. 1905.
"Near Camp 19, New Mexico," *Dr. S. W. Woodhouse.*
I suspect that this is in Arizona.

Heuchera versicolor Greene, Leaflets **1:** 112. 1905.
"On damp shady bluffs in the Black Range," August 3, 1904, *O. B. Metcalfe* 1203.

Heuchera wootonii Rydb. N. Amer. Fl. **22**[2]**:** 113. 1905.
"White Mountains," *E. O. Wooton,* August 5, 1897.
Collected at Gilmores ranch.

HYDRANGEACEAE.

Philidelphus argyrocalyx Wooton, Bull. Torrey Club **25:** 452. 1898.
"On Eagle Creek in the White Mountains," in fruit August 14, 1897; in flower on Ruidoso Creek, June 30, 1897, *E. O. Wooton* 524; altitude 2,100 meters.

Philadelphus ellipticus Rydb. N. Amer. Fl. **22**[2]**:** 174. 1905.
"Near Mesilla Park," *J. D. Tinsley.*
This locality is undoubtedly wrong, for no Philadelphus grows within 12 miles of Mesilla Park. The specimens upon which the description was based must have been collected in the Organ Mountains.

Philadelphus mearnsii W. H. Evans, N. Amer. Fl. **22**[2]**:** 174. 1905.
"Near the Upper Corner Monument, Grant County," *E. A. Mearns.*

Philadelphus microphyllus A. Gray, Mem. Amer. Acad. II. **4:** 54. 1849.
"Santa Fe Creek, on sunny and steep sides of the mountains, between rocks, 11 miles above Santa Fe," June and July, 1847, *Fendler* 266.
Of rather infrequent occurrence in the Santa Fe Range.

GROSSULARIACEAE.

Ribes leptanthum A. Gray, Mem. Amer. Acad. II. **4:** 53. 1849.
=*Grossularia leptantha* (A. Gray) Coville & Britton.
"Rocky banks of the Rio del Norte, and ravines near Santa Fe," May, 1847, *Fendler* 254.

Ribes leptanthum veganum Cockerell, Proc. Biol. Soc. Washington **15:** 99. 1902.
=*Grossularia leptantha* (A. Gray) Coville & Britton.
"Along the Gallinas River, from about 2 miles below Las Vegas to Las Valles," *T. D. A. Cockerell.*

Ribes mescalerium Coville, Proc. Biol. Soc. Washington **13:** 196. 1900.
"At Fresnal, Otero County," July 21, 1899, *E. O. Wooton,* at 2,160 meters.

Ribes mogollonicum Greene, Bull. Torrey Club **8:** 121. 1881.
=*Ribes wolfii* Rothrock.
"Deep, cold ravines near the summits of the Mogollon Mountains," *E. L. Greene* in April, 1881.

Ribes pinetorum Greene, Bot. Gaz. **6**: 157. 1881.
=*Grossularia pinetorum* (Greene) Coville & Britton.
"In woods of *Pinus ponderosa*, in the higher elevations of the Pinos Altos and Mogollon Mountains, flowering in April; fruit ripe in September," *E. L. Greene.*

ROSACEAE.

Amelanchier crenata Greene, Pittonia **4**: 127. 1899.
"On rocky declivities near Aztec," April 23, 1899, *C. F. Baker.*

Amelanchier rubescens Greene, Pittonia **4**: 128. 1899.
"In arroyos and among the hills about Aztec," April 24, 1899, *C. F. Baker.*

Cerasus crenulata Greene, Proc. Biol. Soc. Washington **18**: 56. 1905.
"Mogollon Mountains, New Mexico, at 2,400 meters, August 23, 1903, *O. B. Metcalfe.*"

Crataegus wootoniana Eggleston, Torreya **7**: 236. 1907.
"Mogollon Mountains, on or near the west fork of the Gila River, Socorro County," August 23, 1903, *O. B. Metcalfe* 584, at 2,600 meters.

Fallugia micrantha Cockerell, Entomological News **1901**: 41. 1901.
"Near Mesilla Park," May 3, *T. D. A. Cockerell.*

Fallugia paradoxa acuminata Wooton, Bull. Torrey Club **25**: 306. 1898.
=*Fallugia acuminata* (Wooton) Rydb.
"On the mesa near Las Cruces," July 1, 1897, *E. O. Wooton* 65, altitude 1,300 meters.
Abundant in the locality, commonly found along the arroyos which run across the mesa rather than on the mesa proper, and extending into the lower parts of the mountains.

Fragaria bracteata Heller, Bull. Torrey Club **25**: 194. 1898.
"In a meadow along Santa Fe Creek, 9 miles east of Santa Fe, May 29, 1897, *A. A. Heller* 3615.
This strawberry is the one most commonly seen in the Santa Fe Mountains; its fruit is ripe about the middle of July. Its usual habitat is upon rather dry hillsides.

Holodiscus australis Heller, Bull. Torrey Club **25**: 194. 1898.
=*Sericotheca dumosa* (Nutt.) Rydb.
"In Santa Fe Canyon, 9 miles east of Santa Fe," July 12, 1897, *A. A. Heller* 3840; altitude 2,400 meters.

Potentilla arachnoidea Dougl.; Rydb. N. Amer. Fl. **22**[4]: 350. 1908.
"Valley of Santa Fe."

Potentilla bicrenata Rydb. Bull. Torrey Club **23**: 431. 1896.
"New Mexico," 1883, *C. D. Walcott* 66.

Potentilla crinita A. Gray, Mem. Amer. Acad. II. **4**: 41. 1849.
"Along Santa Fe Creek, and at the foot of hills, in sunny places," July, 1847, *Fendler* 199.

Potentilla diffusa A. Gray, Mem. Amer. Acad. II. **4**: 41. 1849.
=*Potentilla propinqua* Rydb.
"Moist soil, along Santa Fe Creek," June, 1847, *Fendler* 198.

Potentilla ovalis Lehm. Delect. Sem. Hort. Hamb. **1849**: 9. 1849.
=*Fragaria ovalis* (Lehm.) Rydb.
"New Mexico," *Fendler* 206 in 1847, collected somewhere about Santa Fe, doubtless.

Potentilla propinqua Rydb. Bull. Torrey Club **28:** 176. 1901.
"Along Santa Fe Creek."

Potentilla sierraeblancae Wooton & Rydb. Mem. Dept. Bot. Columbia Univ. **2:** 57. 1898.
"White Mountains," August 16, 1897, *E. O. Wooton* 469.
This plant was collected on the very top of White Mountain Peak.

Potentilla subviscosa Greene, Bull. Torrey Club **8:** 97. 1881.
"On a dry southward slope of the Mogollon Mountains," *E. L. Greene* in April, 1881.

Potentilla thurberi A. Gray, Mem. Amer. Acad. II. **5:** 318. 1854.
"Near Santa Rita del Cobre," August, 1851, *Thurber*.

Rosa mirifica Greene, Leaflets **2:** 62. 1910.
"In the Sierra Blanca," *E. O. Wooton* in 1897.
The type was collected near the Mescalero Agency.

Rosa neomexicana Cockerell, Entomological News **1901:** 41. 1901.
"Cloudcroft," *E. O. Wooton*.

Rosa pecosensis Cockerell, Proc. Acad. Phila. **1904:** 110. 1904.
"Pecos."

Rosa praetincta Cockerell, Proc. Acad. Phila. **1904:** 110. 1904.
"Pecos."

Rosa stellata Wooton, Bull. Torrey Club **25:** 152. 1898.
"Near the cueva in the Organ Mountains," *E. O. Wooton* in 1897.
The cueva (Spanish for cavė) is on the west side of the Organs. This rose occurs in only one locality in the range, just east of the cueva, and it is not very abundant at this point.

Rosa suffulta Greene, Pittonia **4:** 12. 1899.
"From the meadows of the Rio Grande at Las Vegas," *G. R. Vasey*.
The description of the type locality will be slightly perplexing, to say the least, to those who are acquainted with the geography of New Mexico. The Rio Grande at the nearest point is about 90 miles from Las Vegas. One can only wonder which of the two places, the vicinity of Las Vegas or the banks of the Rio Grande, is the one where this rose was collected.

Rubus neomexicanus A. Gray, Smiths. Contr. Knowl. **5:** 55. 1853.
"Mountain sides at the copper mines," *Wright* 1061 in 1851.

Rubus nutkanus parvifolius A. Gray, Mem. Amer. Acad. II. **4:** 42. 1849.
"Shady banks of Santa Fe Creek," June, July, 1847, *Fendler* 208.

Sorbus scopulina Greene, Pittonia **4:** 130. 1899.
"Santa Fe Canyon," June, 1897, *A. A. Heller* 3711, at 2,400 meters (other collectors and localities mentioned).
A shrub not at all common in the type locality. It is found only on the west side of the Santa Fe Mountains and does not occur on their eastern slopes or in the Las Vegas Mountains, so far as the writer has been able to ascertain. It is found on shaded and rather damp hillsides.

MIMOSACEAE.

Acacia constricta paucispina Wooton & Standley, Bull. Torrey Club **36:** 105. 1909.
"On Animas Creek, in the Black Range," July 13, 1904, *O. B. Metcalfe* 1123; altitude 1,500 meters.

CAESALPINIACEAE.

Calliandra? herbacea Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 39. 1849.
"Between San Miguel and Las Vegas," August, 1847, *Fendler* 180 (not distributed).

Calliandra reticulata A. Gray, Smiths. Contr. Knowl. **5**: 53. 1853.
"Stony hills at the copper mines," *Wright* 1045 in 1851.

Hoffmanseggia falcaria rusbyi Fisher, Contr. Nat. Herb. **1**: 145. 1892.
"Mangas Springs," *H. H. Rusby*.

FABACEAE.

Aragallus metcalfei Greene, Proc. Biol. Soc. Washington **18**: 12. 1905.
"In the Black Range, southern New Mexico, at 10,000 feet," *O. B. Metcalfe* in 1904.

Aragallus pinetorum Heller, Bull. Torrey Club **26**: 548. 1899.
"On gravelly hills thinly clothed with pine trees, at a point 11 miles southeast of Santa Fe," June 23, 1897, *A. A. Heller* 3751.

Aragallus pinetorum veganus Cockerell, Torreya **2**: 155. 1902.
"An exposed treeless limestone outcrop on the top of the Las Vegas Range, above the Sapello Canyon at about 11,000 feet," June 26, 1901, *Fabián Garcia*.

Astragalus bigelovii A. Gray, Smiths. Contr. Knowl. **5**: 42. 1853.
"On the Organ Mountains," *Wright* 1358 in 1851.
One of the most easily recognized loco weeds of the southwest, fortunately not very abundant in its type locality. It grows in the foothills and on the lower slopes of the Organs, preferring the drier and more sunny slopes; flowering in early spring.

Astragalus cobrensis A. Gray, Smiths. Contr. Knowl. **5**: 43. 1853.
"Near the Cobre or copper mines," *Bigelow*.

Astragalus crescenticarpus Sheldon, Minn. Bot. Stud. **1**: 148. 1894.
"On sandy plains north of Sulphur Springs, New Mexico," *G. R. Vasey*.

Astragalus cyaneus A. Gray, Mem. Amer. Acad. II. **4**: 34. 1849.
"Santa Fe, on gravelly hills and low mountains among rocks," April and May, 1847, *Fendler* 148.

Astragalus diphysus A. Gray, Mem. Amer. Acad. II. **4**: 34. 1849.
"Plains, around Santa Fe, in red sandy soil," April, May, 1847, *Fendler* 146.

Astragalus diphysus albiflorus A. Gray, Mem. Amer. Acad. II. **4**: 34. 1849.
"With the preceding," the species, *Fendler* 147 in 1847.

Astragalus fallax S. Wats. Proc. Amer. Acad. **20**: 362. 1885.
"Pine hills, from the Mimbres to the copper mines."

Astragalus feensis M. E. Jones, Contr. West. Bot. **8**: 20. 1898.
"Dry gravelly hills, Santa Fe," *Fendler* 151 in 1847.

Astragalus gertrudis Greene, Leaflets **2**: 43. 1910.
"Taos County." *Mr. & Mrs. A. A. Heller* 3598, May 27, 1897.

Astragalus gilensis Greene, Bull. Torrey Club **8**: 97. 1881.
"On a high summit at the mouth of the canyon of the Gila River," *E. L. Greene* in April, 1881.

Astragalus greenei A. Gray, Proc. Amer. Acad. **16**: 105. 1880.
"Foothills of the Mogollon Mountains," *E. L. Greene*, April 20, 1880.

Astragalus humistratus A. Gray, Smiths. Contr. Knowl. **5**: 43. 1853.
"Pebbly bed of a stream, and on hills under pine trees, near the copper mines," *Wright* 1003 in 1851.

Astragalus lonchocarpus Torr. in Pac. R. Rep. **4:** 80. 1856.
A new name for *Phaca macrocarpa* A. Gray.

Astragalus matthewsii S. Wats. Proc. Amer. Acad. **18:** 192. 1883.
"At Fort Wingate," *Dr. W. Matthews.*

Astragalus mogollonicus Greene, Bull. Torrey Club **8:** 97. 1881.
"Bleak, grassy summits of the middle elevations of the Mogollon Mountains," *E. L. Greene* in April, 1881.

Astragalus oocalycis M. E. Jones, Contr. West. Bot. **8:** 10. 1898.
"On bottom lands at Aztec."

Astragalus procumbens S. Wats. Proc. Amer. Acad. **20:** 361. 1885.
"Near Fort Wingate," *Dr. W. Matthews.*

Astragalus rothrockii Sheldon, Minn. Bot. Stud. **1:** 174. 1894.
"New Mexico," *J. T. Rothrock.*

Astragalus simulans Cockerell, Torreya **2:** 154. 1902.
"Stony hills at Las Vegas," May 18, 1901, *T. D. A. & Wilmatte P. Cockerell.*

Astragalus tephrodes A. Gray, Smiths. Contr. Knowl. **5:** 45. 1853.
"Plains at the base of the Organ Mountains," *Wright.*
Not uncommon in the Organ foothills, flowering in early spring.

Astragalus vaccarum A. Gray, Smiths. Contr. Knowl. **5:** 43. 1853.
"Ojo de Vaca, west of the copper mines," *Wright* 1002 in 1851.

Astragalus wingatanus S. Wats. Proc. Amer. Acad. **18:** 192. 1883.
"At Fort Wingate," *Dr. W. Matthews* in 1882.

Astragalus wootoni Sheldon, Minn. Bot. Stud. **1:** 138. 1894.
"Near Las Cruces," *E. O. Wooton.*
A flower of early spring, found only in adobe soil in the Rio Grande Valley. A similar but different species occurs in the Organ foothills a few miles away.

Cologania longifolia A. Gray, Smiths. Contr. Knowl. **5:** 35. 1853.
"Hills near the copper mines," *Wright* 961 in 1851.

Dalea filiformis A. Gray, Smiths. Contr. Knowl. **5:** 39. 1853.
=*Parosela filiformis* (A. Gray) Heller.
"Hillsides near the copper mines," *Wright* 992 in 1851.

Dalea polygonoides A. Gray, Smiths. Contr. Knowl. **5:** 39. 1853.
=*Parosela polygonoides* (A. Gray) Heller.
"Pebbly bed of mountain torrents, near the copper mines," *Wright* 991 in 1851.

Dalea scariosa S. Wats. Proc. Amer. Acad. **17:** 369. 1882.
=*Parosela scariosa* (S. Wats.) Heller.
"Near Albuquerque," *E. L. Greene* in 1877.

Dalea scoparia A. Gray, Mem. Amer. Acad. II. **4:** 32. 1849.
=*Parosela scoparia* (A. Gray) Heller.
"Jornada del Muerto, between Santa Fe and El Paso del Norte," August, 1846, *Wislizenus.*
A common and conspicuous shrub along the edge of the Jornada. Its favorite habitat seems to be the sand hills in the valley of the Rio Grande.

Dalea urceolata Greene, Leaflets **1:** 199. 1906.
=*Parosela urceolata* (Greene).
"Mogollon Mountains," August 20, 1903, *O. B. Metcalfe* 553.

Dalea wislizeni sessilis A. Gray, Proc. Amer. Acad. **16**: 105. 1880.
=*Parosela wislizeni sessilis* (A. Gray) Vail.
"New Mexico and Arizona," *Greene* in 1877, *Lemmon* in 1880.

Desmodium grahami A. Gray, Smiths. Contr. Knowl. **5**: 48. 1853.
=*Meibomia grahami* (A. Gray) Kuntze.
"On mountains near the copper mines," *Wright* 1015 in 1851.

Desmodium neomexicanum A. Gray, Smiths. Contr. Knowl. **5**: 53. 1852.
This is certainly Texan, the type coming from a locality 30 miles east of El Paso.

Galactia tephrodes A. Gray, Smiths. Contr. Knowl. **5**: 34. 1853.
"Mountain sides near Conde's camp between the copper mines and the Chiricahui [Chiricahua] Mountains," *Wright* 956, in 1851.

Hosackia wrightii A. Gray, Smiths. Contr. Knowl. **5**: 42. 1853.
=*Lotus wrightii* (A. Gray) Greene.
"Stony hills at the copper mines," *Wright* 1000 in 1851.

Lathyrus oreophilus Wooton & Standley, Muhlenbergia **5**: 87. 1909.
"In James Canyon, about 4 miles east of Cloudcroft, in the Sacramento Mountains," June 26, 1899, *E. O. Wooton.*

Lathyrus palustris var.? **graminifolius** S. Wats. Proc. Amer. Acad. **23**: 263. 1888.
"New Mexico."

Lotus mollis Greene, Pittonia **2**: 143. 1890.
"Organ Mountains."

Lotus neomexicanus Greene, Pittonia **2**: 144. 1890.
"Near Silver City," *E. L. Greene.*

Lupinus aduncus Greene, Pittonia **4**: 132. 1900.
"Dry ravines among the sandy hills at Aztec," May 2, 1899, *C. F. Baker.*

Lupinus ammophilus Greene, Pittonia **4**: 136. 1900.
"Sandy bottoms of dry streams at Aztec," April 20, 1899, *C. F. Baker* (Colorado localities mentioned besides).

Lupinus decumbens argophyllus A. Gray, Mem. Amer. Acad. II. **4**: 37. 1849.
=*Lupinus argophyllus* (A. Gray) Cockerell.
"Plains around Santa Fe," May to August, 1847, *Fendler* 166.
One of the handsomest and most conspicuous flowers upon the mesas and in the foothills of the mountains about Santa Fe.

Lupinus helleri Greene, Pittonia **4**: 134. 1900.
"Canyon 1 mile southeast of Santa Fe," *A. A. Heller* 3557, in 1897.

Lupinus ingratus Greene, Pittonia **4**: 133. 1900.
"Frequent in low grassy lands at Chama," September 2, 1899, *C. F. Baker.*

Lupinus neomexicanus Greene, Pittonia **4**: 133. 1900.
"About Silver City and in foothills of the Pinos Altos Mountains," *E. L. Greene* in 1877 and 1880.

Meibomia metcalfei Rose & Painter, Bot. Gaz. **40**: 144. 1905.
"In the Black Range, Animas Creek, Grant County, New Mexico, on ditch banks, altitude 1,500 meters," July 13, 1904, *O. B. Metcalfe* 1137.
In the original the name of the collector was given wrongly Metcalf and the specific name of the plant as *metcalfii.*

Parryella filifolia Torr. & Gray, Proc. Amer. Acad. 7: 397. 1867.
"Along the Rio Grande below Albuquerque," *Dr. C. C. Parry.*

Petalostemon gracile oligophyllum Torr. in Emory, Mil. Recon. 139. 1849.
=*Petalostemon oligophyllum* (Torr.) Rydb.
"Valley of the del Norte," *Emory* in 1847.

Phaca fendleri A. Gray, Mem. Amer. Acad. II. 4: 36. 1849.
=*Astragalus fendleri* A. Gray.
"Woodlands in the mountains between Santa Fe and Pecos," August, 1847, *Fendler* 157.

Phaca gracilenta A. Gray, Mem. Amer. Acad. II. 4: 36. 1849.
=*Astragalus gracilentus.*
"Bare, rocky hills, Santa Fe," April to June, 1847, *Fendler* 159.

Phaca macrocarpa A. Gray, Mem. Amer. Acad. II. 4: 36. 1849.
=*Astragalus lonchocarpus* Torr.
"Rocky declivities near Santa Fe," June, 1847, *Fendler* 160.

Phaca picta A. Gray, Mem. Amer. Acad. II. 4: 37. 1849.
=*Astragalus* sp.
"Loose, sandy soil on the banks of the Rio del Norte, especially among low shrubs," April and June, 1847, *Fendler* 161.

Phaseolus acutifolius tenuifolius A. Gray, Smiths. Contr. Knowl. 5: 33. 1853.
"Mountain sides near the copper mines," *Wright* 950, in 1851.

Phaseolus angustissimus A. Gray, Smiths. Contr. Knowl. 5: 33. 1853.
"Stony hillsides at the crossing of the Rio Grande above Dona Ana," *Wright* 951 in 1851.
A species peculiar to the Rio Grande Valley, apparently. It is not at all abundant, but is found occasionally along the ditch banks and in other similar locations.

Phaseolus macropoides A. Gray, Smiths. Contr. Knowl. 5: 33. 1853.
"Stony hills at the copper mines," *Wright* 953 in 1851.

Phaseolus parvulus Greene, Bot. Gaz. 6: 217. 1881.
"Abundant in deep woods of *Pinus ponderosa*, in the Pinos Altos Mountains," "flowering in August," *E. L. Greene.*

Robinia neomexicana A. Gray, Mem. Amer. Acad. II. 5: 314. 1854.
"Dry hills on the Mimbres," May, 1851, *Thurber.*
The exact locality is said to have been 8 miles from the copper mines.

Trifolium fendleri Greene, Pittonia 3: 221. 1897.
"Wet meadows and about cold springy places in the mountain parks of southern Colorado and northern New Mexico; also along irrigating ditches among the lower foothills and on the plains, here an immigrant from its native subalpine stations."
From its specific name it is to be inferred that Fendler's collection from the vicinity of Santa Fe is to be taken as the type. If this is true the plant found about Santa Fe, the only native Trifolium in the region, is not a subalpine plant at all. In the Santa Fe Mountains I have never seen it growing above about 2,250 meters.

Vicia leucophaea Greene, Bot. Gaz. 6: 217. 1881.
"Along streams in the higher mountains of southwestern New Mexico, flowering in July and August," *E. L. Greene.*

GERANIACEAE.

Geranium atropurpurem Heller, Bull. Torrey Club **25**: 195. 1898.
=*Geranium gracile* Engelm.
"Along Santa Fe Creek," June to July, 1897, *A. A. Heller* 2723.

Geranium fremontii Torr. in A. Gray, Mem. Amer. Acad. II. **4**: 26. 1849.
"Bottom lands of the Mora River among shrubs," August, 1847, *Fendler* 90 (not distributed).
In the North American Flora Dr. J. K. Small gives the type locality incorrectly, as the "Moro" River.

Geranium pentagynum Engelm. in Wisliz. Mem. North. Mex. 90. 184. 1848.
=*Geranium richardsonii* Fisch. & Trautv.
"On Wolf Creek," *Wislizenus* in 1846.

LINACEAE.

Linum australe Heller, Bull. Torrey Club **25**: 627. 1898.
=*Cathartolinum australe* (Heller) Small.
"On an open slope in dry ground, at the head of the reservoir, 4 miles east of Santa Fe," June 17, 1897, *A. A. Heller* 3724.

Linum neomexicanum Greene, Bot. Gaz. **6**: 183. 1881.
=*Cathartolinum neomexicanum* (Greene) Small.
"In woods of *Pinus ponderosa* on the Pinos Altos Mountains," August, September, 1880, *E. L. Greene.*

Linum rigidum puberulum Engelm. in A. Gray, Smiths. Contr. Knowl. **3**: 25. 1852.
=*Cathartolinum puberulum* (Engelm.) Small.
"Santa Fe to the Cimarron River," *Fendler* 85, in 1847.

Linum vernale Wooton, Bull. Torrey Club **25**: 452. 1898.
=*Cathartolinum vernale* (Wooton) Small.
"The base of a small mountain, generally called Tortugas, standing alone on the mesa about 5 miles east of Las Cruces," April 22, 1893, and July 1, 1897, *E. O. Wooton* 589.
A very common plant, not only upon Tortugas Mountain but upon the surrounding mesa as well.

OXALIDACEAE.

Ionoxalis caerulea Small, N. Amer. Fl. **25**[1]: 33. 1907.
"In Lincoln County," June 7, 1898, *Miss Josephine Skehan* 112.

Ionoxalis grayi Rose, Contr. Nat. Herb. **10**: 112. 1906.
"At the copper mines," *Wright* in 1851.

Ionoxalis metcalfei Small, N. Amer. Fl. **25**[2]: 39. 1907.
"On the Mogollon Mountains, Socorro County," July 23, 1903, *O. B. Metcalfe* 299.

Ionoxalis monticola Small, N. Amer. Fl. **25**[2]: 42. 1907.
"At Iron Creek, Grant County," August 12, 1904, *O. B. Metcalfe* 1220.

ZYGOPHYLLACEAE.

Kallstroemia brachystylis Vail, Bull. Torrey Club **24**: 206. 1897.
"Mesa near Las Cruces," *E. O. Wooton.*
A common weed, not only upon the mesa but more commonly in adobe soil in the Rio Grande Valley.

Kallstroemia hirsutissima Vail in Small, Fl. Southeast. U. S. 670. 1903.
"Dona Ana Co.," *E. O. Wooton* 564 in 1897.

Larrea glutinosa Engelm. in Wisliz. Mem. North. Mex. 93. 1848.
=*Covillea glutinosa* (Engelm.) Rydb.
"Olla and Fray Cristobal," *Wislizenus* in 1846.

RUTACEAE.

Astrophyllum dumosum Torr. Pac. R. Rep. **2**: 161. 1855.
=*Choisya dumosa* (Torr.) A. Gray.
"On the Organ Mountains," *Pope* in 1854.
This interesting plant is not known to occur in the Organs proper, but it is found just to the north in the San Andreas Range, and perhaps it was first collected there. Whether or not it is found in the Franklin Mountains to the south I do not know. Pope passed through the pass between the Organs and the San Andreas, so that it is probable that he saw the shrub there.

Ptelea formosa Greene, Contr. Nat. Herb. **10**: 59. 1906.
"Sierra Blanca," August 17, 1897, *E. O. Wooton* 657, at 2,120 meters.
Collected at Gilmores Ranch on Eagle Creek.

Ptelea neomexicana Greene, Contr. Nat. Herb. **10**: 68. 1906.
"In the Black Range," October 4, 1904, at 2,270 meters, *O. B. Metcalfe* 1479.

Ptelea parvula Greene, Contr. Nat. Herb. **10**: 64. 1906.
"Summit of the Sierra Blanca," August 1, 1897, *E. O. Wooton* 658.
Doctor Greene says, in discussing this plant, that it was collected at an "altitude of 6,300 feet, which is about that of the summit." This is a mistake, for the summit of the range reaches an elevation of almost 12,000 feet. The specimens were collected at the Mescalero Agency, which is much lower.

Ptelea subvestita Greene, Contr. Nat. Herb. **10**: 67. 1906.
"Dry hills about Silver City and Fort Bayard," July 20, 1880, *E. L. Greene.*

Ptelea undulata Greene, Contr. Nat. Herb. **10**: 62. 1906.
"Probably of the Burro Mountains," July 17, 1880, *H. H. Rusby* 111.

Ptelea villosula Greene, Contr. Nat. Herb. **10**: 60. 1906.
"Known only from the isolated Organ Mountains," July 1[illegible] 1897, *E. O. Wooton* 134.
One of the more abundant shrubs in the Organs, found only at the lower altitudes.

POLYGALACEAE.

Monnina wrightii A. Gray, Smiths. Contr. Knowl. **5**: 31. 1853.
"Crevices of rocks, mountain sides, near the copper mines," *Wright* 938 in 1851.

EUPHORBIACEAE.

Acalypha neomexicana Muell. Linnaea **34**: 19. 1865.
"In Novo-Mexico," *Wright* 1817 and 1819 in 1851.
Doubtfully New Mexican.

Argyrothamnia neomexicana Muell. Linnaea **34**: 147. 1865.
=*Ditaxis neomexicana* (Muell.) Heller.
"In Novo-Mexico," *Wright* 643 and 1797.
The first of these numbers is certainly Texan; the second may be New Mexican.

Croton neomexicanus Muell. Linnaea **34:** 141. 1865.
"In Novo-Mexico inter Western Texas et El Paso," *Wright* 642.
The description of this locality would be truly amazing if it were to be given to-day. It refers, of course, to a Texan collection.

Ditaxis cyanophylla Wooton & Standley, Bull. Torrey Club **36:** 106. 1909.
"Kingston, Sierra County," "growing in dry gravel; altitude about 2,100 meters," May 25, 1904, *O. B. Metcalfe.*

Euphorbia bilobata Engelm. in Torr. Bot. Mex. Bound. 190. 1859.
=*Zygophyllidium bilobatum* (Engelm.).
"Near the Copper Mines," *Bigelow* (other localities and collectors mentioned).

Euphorbia dentata cuphosperma Engelm. in Torr. Bot. Mex. Bound. 190. 1859.
=*Poinsettia cuphosperma* (Engelm.) Small.
"Copper mines," *Wright* 1834 in 1851 (also in Sonora and Chihuahua).

Euphorbia dioica var.? **indivisa** Engelm. in Torr. Bot. Mex. Bound. 187. 1859.
=*Chamaesyce* sp.
"Near the Copper Mines," *Wright* 1845 in 1851; also collected in Sonora by Thurber.

Euphorbia fendleri Torr. & Gray, Pac. R. Rep. **2:** 175. 1855.
=*Chamaesyce fendleri* (Torr. & Gray) Small.
"New Mexico," *Fendler* 800 in 1847, collected somewhere near Santa Fe, probably. It is common on the dry foothills and mesas about Santa Fe.

Euphorbia montana gracilior Engelm. in Torr. Bot. Mex. Bound. 192. 1859.
=*Tithymalus* sp.
"In New Mexico," *Fendler* 786, probably from the Santa Fe region; also *Wright* 661 (undoubtedly Texan) and 1825.

Euphorbia neomexicana Greene, Bull. Calif. Acad. **2:** 55. 1886.
=*Chamaesyce neomexicana* (Greene).
"On the plains of the upper Gila in western New Mexico," *E. L. Greene.*

Tragia stylaris Muell. Linnaea **34:** 180. 1865.
Under this citation no type was designated for the species proper, but instead the plant is described as having three forms. Of these the first is *latifolia.* The type of this was collected "in Novo-Mexico," by Fendler in 1847 (no. 776), in all probability somewhere around Santa Fe. The other two forms are Texan.

ANACARDIACEAE.

Rhus sorbifolia Greene, Proc. Biol. Soc. Washington **8:** 195. 1906.
"Mountains west of Las Vegas."

Rhus trilobata mollis A. Gray; Patterson, Check List 21. 1892.
=*Schmaltzia* sp.
"Organ Mountains," *Wright.*

Schmaltzia emoryi Greene, Leaflets **1:** 133. 1905.
"Hills and low mountains of eastern and southern New Mexico," etc., "first collected on Emory's expedition."

Schmaltzia leiocarpa Greene, Leaflets **1:** 133. 1905.
"Valley of the Rio Grande at Mesilla," *E. O. Wooton* 48 in 1897.

Toxicodendron punctatum Greene, Leaflets **1:** 125. 1905.
"From the Black Range of mountains in southern New Mexico," *O. B. Metcalfe* 1088 in 1904.

ACERACEAE.

Acer neomexicanum Greene, Pittonia **5**: 3. 1902.
"From the mountains near Las Vegas," *G. R. Vasey* in 1881 (also collected by others in other localities).

RHAMNACEAE.

Ceanothus fendleri A. Gray, Mem. Amer. Acad. II. **4**: 29. 1849.
"Mountains east of Santa Fe, in sunny places," June and July, 1847, *Fendler* 106.
At altitudes of 2,250 to about 2,650 meters throughout the Santa Fe and Las Vegas mountains, common on open and rather dry hillsides.

Ceanothus mogollonicus Greene, Leaflets **1**: 67. 1904.
"On Mogollon Creek in the Mogollan Mountains, New Mexico, at 8,000 feet," "July 16, 1893," *O. B. Metcalfe*.
Mogollan is a misprint for Mogollon; and instead of 1893 the year should be 1903.

Rhamnus betulaefolia Greene, Pittonia **3**: 16. 1896.
"Banks of streams in the Mogollon Mountains," *H. H. Rusby* in 1881.

Rhamnus fasciculata Greene, Leaflets **1**: 63. 1904.
"White Mountains," July 25, 1897, *E. O. Wooton*.
Collected on the south fork of Tularosa Creek, 3 miles east of the Mescalero Agency.

Rhamnus ursina Greene, Leaflets **1**: 63. 1904.
"On Bear Mountain near Silver City," June 17, 1903, *O. B. Metcalfe*.

MALVACEAE.

Anoda pentaschista A. Gray, Smiths. Contr. Knowl. **5**: 22. 1853.
"Valley between Ojo de Gavilan and Conde's Camp, beyond the copper mines," *Wright* 893 in 1851.

Anoda wrightii A. Gray, Smiths. Contr. Knowl. **5**: 22. 1853.
"On the summit of mountains near the copper mines," *Wright* 894 in 1851.

Malvastrum cockerellii A. Nelson, Bot. Gaz. **34**: 24. 1902.
(By inference) "At Las Vegas," *T. D. A. Cockerell*.

Malvastrum digitatum Greene, Leaflets **1**: 154. 1905.
"Kingston," June, 1904, *O. B. Metcalfe* 941.

Sida neomexicana A. Gray, Proc. Amer. Acad. **22**: 296. 1887.
"On mountains at the copper mines."

Sidalcea candida A. Gray, Mem. Amer. Acad. II. **4**: 24. 1849.
"Along Santa Fe Creek," June, July, 1847, *Fendler* 80.
Found usually at the very edge of the water, not only east of Santa Fe but in all the surrounding mountains.

Sidalcea candida tincta Cockerell, Bot. Gaz. **29**: 280. 1900.
"Harvey's Ranch, near Las Vegas," *T. D. A. Cockerell*.

Sidalcea neomexicana A. Gray, Mem. Amer. Acad. II. **4**: 23. 1849.
"Moist meadows, Santa Fe," June, July, 1847, *Fendler* 79.
Common in locations similar to those in which *S. candida* is found.

Sphaeralcea emoryi Torr. in A. Gray, Mem. Amer. Acad. II. **4**: 23. 1849.
"Southern New Mexico," *Emory* in 1847.

Sphaeralcea fendleri A. Gray, Mem. Amer. Acad. II. 4: 29. 1849.
"Fields and wet meadows, Santa Fe," June, 1847, *Fendler* 78.
Abundant in rather dry places about Santa Fe, growing with and often confused with *S. lobata* from which it is abundantly distinct. The differences between it and the latter species are more evident in the field than in dried specimens.

Sphaeralcea glabrescens Wooton & Standley, Bull. Torrey Club 36: 107. 1909.
"At Providencia Lake, about 30 miles west of Las Cruces," July 3, 1900, *E. O. Wooton.*

Sphaeralcea incana Torr. in A. Gray, Mem. Amer. Acad. II. 4: 23. 1849.
"In New Mexico," *Abert.*

Sphaeralcea incana var.? **dissecta** A. Gray, Smiths. Contr. Knowl. 3: 21. 1852.
"Ojo del Muerto," *Wislizenus* in 1846.

Sphaeralcea laxa Wooton & Standley, Bull. Torrey Club 36: 108. 1909.
"At Frisco, Socorro County," July 25, 1900, *E. O. Wooton.*

Sphaeralcea leiocarpa Wooton & Standley, Bull. Torrey Club 36: 107. 1909.
"At Mangas Springs," September 24, 1903, *O. B. Metcalfe* 791, at 1,465 meters.

Sphaeralcea lobata Wooton, Bull. Torrey Club 25: 306. 1898.
"Mesilla," July 14, 1897, *E. O. Wooton* 2; altitude 1,200 meters.
A troublesome weed in the Mesilla Valley, growing everywhere in cultivated fields, along ditches, and in waste land, flowering all summer. A species of a very wide range, apparently. It is the commonest one of the genus in New Mexico.

Sphaeralcea lobata perpallida Cockerell, Bull. Torrey Club 27: 87. 1900.
"Occurs as a sport in the Mesilla Valley, New Mexico, but from Rincon, N. Mex., 20 miles or more northward along the railroad, it occurs to the exclusion of the type," *T. D. A. Cockerell.*

Sphaeralcea martii Cockerell, Bot. Gaz. 32: 60. 1901.
"Picacho Mountain, Mesilla Valley," *T. D. A. Cockerell.*
An excellent species, known only from the type locality, which, on account of its inaccessibility, has been visited by botanists only two or three times.

Sphaeralcea pumila Wooton & Standley, Bull. Torrey Club 36: 110. 1909.
"At the Diamond A Wells in the Silver City Draw, Grant County," July 1, 1906, *E. O. Wooton.*

Sphaeralcea ribifolia Wooton & Standley, Bull. Torrey Club 36: 109. 1909.
"At the Martin and Sloan Ranch, Grant County," August 13, 1902, *E. O. Wooton.*

Sphaeralcea simulans Wooton & Standley, Bull. Torrey Club 36: 109. 1909.
"On the plains both east and west of Deming," June 14 (type) and 13, 1906, *E. O. Wooton.*

Sphaeralcea tripartita Wooton & Standley, Bull. Torrey Club 36: 108. 1909.
"At Kingston, Sierra County," "growing in dry gravel," July 10, 1904, *O. B. Metcalfe* 1103.

FOUQUIERIACEAE.

Fouquieria splendens Engelm. in Wisliz. Mem. North. Mex. 98. 1848.
"Jornada del Muerto," *Wislizenus* in 1846.
Doctor Wislizenus makes no mention of this remarkable plant in his journal, so that we can not tell on just what part of the Jornada it was collected or first seen; but probably it was near the northern end of that plain. The shrub is conspicuous everywhere on the mesa east of the Rio Grande Valley in this locality, producing its flowers in spring but not putting out its leaves until July and August after the rains.

VIOLACEAE.

Viola neomexicana Greene, Pittonia **5**: 28. 1902.

"Near Santa Fe," *A. A. Heller* 3645 in 1897; and "Mogollon Mountains," April 20, 1880, *E. L. Greene.*

About Santa Fe this violet is found only in the mountains, in moist places in the shade, at altitudes of 2,250 to 2,700 meters or more.

Viola wilmattae Pollard & Cockerell, Proc. Biol. Soc. Washington **15**: 178. 1902.

"In Sapello Canyon, Beulah," at 2,400 meters, *Mrs. Wilmatte P. Cockerell.*

LOASACEAE.

Bartonia multiflora Nutt. Journ. Acad. Phila. n. ser. **1**: 180. 1848.

= *Touterea multiflora* (Nutt.) Rydb.

"Sandy hills along the borders of the Rio del Norte, Santa Fe," August, *William Gambel.*

No species of Touterea has a wider range than this one, perhaps. It occurs abundantly upon the mesas about Santa Fe, never extending into the mountains.

Mentzelia parviflora Heller, Bull. Torrey Club **25**: 199. 1898.

= *Acrolasia sp.*

"Eleven miles southeast of Santa Fe, on the road leading to Cañoncito," July 23, 1897, *A. A. Heller* 3750, at 2,200 meters.

Mentzelia perennis Wooton, Bull. Torrey Club **25**: 260. 1898.

= *Touterea perennis* (Wooton) Rydb.

"In a white soil (strongly impregnated with gypsum?) at Round Mountain, half way from Tularosa to the Mescalero Agency in the White Mountains," July 21, 1897, *E. O. Wooton* 184, at 1,630 meters.

CACTACEAE.

Cereus coccineus melanacanthus Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 51. 1849.

= *Echinocereus coccineus* form.

"Santa Fe," *Fendler* in 1847.

Cereus coccineus cylindricus Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 51. 1849.

= *Echinocereus coccineus* form.

"Santa Fe," *Fendler* in 1847.

Cereus fendleri Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 51. 1849.

= *Echinocereus fendleri* (Engelm.) Rümpl.

"Santa Fe, on elevated sandy plains," June, 1847, *Fendler* 249.

Not infrequent upon the mesas about Santa Fe, the commonest of the Echinocerei in this locality.

Cereus fendleri pauperculus Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 51. 1849.

= *Echinocereus fendleri* form.

Type locality same as for the species.

Cereus hexaedrus Engelm. Proc. Amer. Acad. **3**: 285. 1856.

= *Echinocereus hexaedrus* (Engelm.) Rümpl.

"On sandy hills, under cedars, about 15 miles west of Zuni."

Cereus phoeniceus conoideus Engelm. Proc. Amer. Acad. **3**: 284. 1856.
=*Echinocereus conoideus* Engelm.
"Rocky places on the upper Pecos," probably at Anton Chico, for that is the locality given on the labels of what appear to be the type specimens, *Bigelow* in 1853.

Cereus viridiflorus minor Engelm. Proc. Amer. Acad. **3**: 278. 1856.
=*Echinocereus viridiflorus* form.
"About Santa Fe."

Echinocactus horizonthalonius centrispinus Engelm. Proc. Amer. Acad. **3**: 276. 1856.
=*Echinocactus horizonthalonius* Lem.
"Doñana," *Wislizenus* in 1846.

Echinocactus wislizeni Engelm. in Wisliz. Mem. North. Mex. 96. 1848.
"Near Doñana," *Wislizenus* in 1846.
Doctor Wislizenus says in his journal on August 5: "Before reaching Doñana I met on the road with the largest cactus of the kind I have ever seen. It was an oval Echinocactus with enormous fishhook-like prickles, measuring in height 4 feet and in the largest circumference 6 feet 8 inches. It had yellow flowers and at the same time seed, both of which I took along with some of the ribs." The discoverer was fortunate in seeing so large a specimen, for such size, in this locality at least, is unusual. The plant, in spite of the fact that it is extensively used by the Mexicans for making a kind of candy and for other purposes, is still common and one of the most conspicuous objects upon the sandy mesas about Dona Ana.

Echinocereus coccineus Engelm. in Wisliz. Mem. North. Mex. 93. 1848.
"With the foregoing (*E. triglochidiatus*), also about Santa Fe," *Wislizenus* in 1846.
There is no specimen from Wolf Creek in the Engelmann Herbarium, but there is one from Santa Fe, so the latter is perhaps to be considered the type. It is altogether possible, as has been suggested, that this is the same as the *Mamillaria aggregata* of Emory's Reconnoissance. *E. coccineus* is the only New Mexican Echinocereus, with one exception which need not enter into consideration, that forms dense hemispherical masses like the plant there illustrated.

Echinocereus neomexicanus Standley, Bull. Torrey Club **35**: 87. 1908.
"Mesa west of the Organ Mountains," *Standley* in 1907.
The type plants were cultivated but came originally from this locality.

Echinocereus triglochidiatus Engelm. in Wisliz. Mem. North. Mex. 93. 1848.
"On Wolf Creek, in pine woods," *Wislizenus* in 1846.

Echinocereus viridiflorus Engelm. in Wisliz. Mem. North. Mex. 91. 1848.
"Prairies on Wolf Creek," *Wislizenus* in 1846.
Collected on July 24, doubtless, since this stream was crossed on that day. This species is the type of the genus Echinocereus.

Mamillaria aggregata Engelm. in Emory, Mil. Recon. 155. *f. 1.* 1848.
This was sketched on October 18. On that day Emory was at Ben Moore and the Copper Mines, so the plant must have been found somewhere in that now classic locality. The species was described from a rather poor sketch, and it seems improbable that anyone will ever be able to determine what the sketch represents. Doctor Engelmann believed this to be *Echinocereus coccineus*, but it might possibly be one of the cespitose Mamillarias.

Mamillaria macromeris Engelm. in Wisliz. Mem. North. Mex. 97. 1848.
"Sandy soil near Doñana," *Wislizenus* in 1846.
No doubt collected upon the mesa near that settlement, for it is common there.

Mamillaria papyracantha Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 49. 1849.
=*Echinocactus papyracanthus* Engelm.
"In a valley between the lower hills, near Santa Fe, in loose, red sandy, though fertile soil, found only once," May, 1847, *Fendler* 245.

Mamillaria vivipara radiosa borealis Engelm. Proc. Amer. Acad. **3**: 269. 1856.
= *Mamillaria radiosa* Engelm.
"Northern New Mexico."

Mamillaria vivipara radiosa neomexicana Engelm. Proc. Amer. Acad. **3**: 269. 1856.
"From western Texas to New Mexico."
The New Mexican plant must have been intended as the type, else the varietal name would not have been assigned it.

Mamillaria wrightii Engelm. Proc. Amer. Acad. **3**: 262. 1856.
"Near the copper mines," *Wright* in 1851.

Opuntia angustata Engelm. Proc. Amer. Acad. **3**: 292. 1856.
"Foot of the Inscription Rock near Zuñi," *Bigelow* in 1853.

Opuntia arborescens Engelm. in Wisliz. Mem. North Mex. 90. 1848.
"Mountains of New Mexico," *Wislizenus* in 1846.
Doctor Engelmann in his description speaks of the specimens from Wagon Mound, which are probably to be taken as the type. In his journal on June 23 Doctor Wislizenus says: "* * * the so-called Wagon Mound * * * I ascended as far as the rocks would allow. On the Wagon Mound I found for the first time a specimen of the *Opuntia arborescens* (Eng.), so common throughout New Mexico, and whose porous stems are used in the South as torches." This cane cactus, as it is commonly called, though sometimes *velus de coyote*, is prominent everywhere on the plains in this part of New Mexico.

Opuntia brachyarthra Engelm. Proc. Amer. Acad. **3**: 302. 1856.
"At the foot of the Inscription Rock near Zuñi, under pine trees," *Bigelow* in 1853.

Opuntia clavata Engelm. in Wisliz. Mem. North. Mex. 95. 1848.
"About Albuquerque," *Wislizenus* in 1846, on the plains east of the city, no doubt, for the plant is most abundant there.

Opuntia cymochila montana Engelm. Proc. Amer. Acad. **3**: 296. 1856.
"On the Sandia Mountains, near Albuquerque," *Bigelow* in 1853.

Opuntia davisii Engelm. & Bigel. Proc. Amer. Acad. **3**: 305. 1856.
"On the Upper Canadian, eastward and westward of the Tucumcari hills," *Bigelow* in 1853.
If this was described from plants collected to the westward of the Tucumcari hills, it certainly has its type locality in New Mexico. If it came from the eastward, it may have come from New Mexico or from the Panhandle of Texas. The specific name was given in honor of Col. Jefferson Davis, then Secretary of War.

Opuntia dillei Griffiths, Rep. Mo. Bot. Gard. **20**: 82. *pl. 4. lower f., pl. 2. f. 10, pl. 13. f. 7.* 1909.
"San Andreas Canyon of the Sacramento Mountains," *David Griffiths* 9460, in 1908.

Opuntia engelmanni cyclodes Engelm. Proc. Amer. Acad. **3**: 291. 1856.
"About the mouth of the Gallinas into the Pecos, near Anton Chico," *Bigelow* in 1853.
No one since Bigelow has visited this locality in search of plants.

Opuntia filipendula Engelm. Proc. Amer. Acad. **3**: 294. 1856.

"Alluvial bottoms of the Rio Grande, near El Paso."

In the Cactaceae of the Mexican Boundary the locality is given as "alluvial bottoms of the Rio Grande near Dona Ana." The specimens in the Engelmann Herbarium, which appear to be the type, also bear this latter locality written upon their labels, so that the type locality is probably to be considered New Mexican. This Opuntia is common near Dona Ana, growing in the adobe soil of the Rio Grande Valley and in the loamy soil at the edge of the mesa, seldom or never occurring upon the sandy mesa.

Opuntia hystricina Engelm. & Bigel. Proc. Amer. Acad. **3**: 299. 1856.

"West of the Rio Grande to the San Francisco Mountains," *Bigelow*.

In what was intended to be the original publication of this species on page 44 of the Botany of Whipple's Report, we find the statement: "Abundant from the Rio Grande westward to the San Francisco Mountains," so that, in all probability, the type was gotten in New Mexico. The San Francisco Mountains are in Arizona.

Opuntia microcarpa Engelm. in Emory, Mil. Recon. 157. *f.* 7. 1848.

"Very abundant on the Del Norte and Gila," *Emory* in 1847.

This is another of the cacti that Doctor Engelmann described from Stanly's drawings and one regarding whose identification there must always be uncertainty. In his description Doctor Engelmann writes as follows: "Joints 1½ to 2½ inches long and little less wide; berries obovate, scarlet, only about 3 or 4 inches long. If the figure represents the natural size, this species ought to bear the name *O. microcarpa*." There is evidently some mistake in the statements about the proportions of the drawing. Of course it was less than natural size, and this explains the small size of the joints; but Doctor Engelmann must have made a slip of the pen in giving the relative dimensions of the fruit. Probably the description was intended to read "3 or 4 lines long." The drawing, the writer feels sure, represents the plant from southern New Mexico that has passed as *O. engelmanni cyclodes*, for no other species of the region has the habit shown in the figure. *Opuntia engelmanni cyclodes*, too, is common in the region described. It is true that its fruits are not scarlet, but I am not acquainted with any Opuntia of this type that has scarlet fruits, and there might easily have been a mistake in the shade of red assigned to the fruit.

Opuntia missouriensis trichophora Engelm. Proc. Amer. Acad. **3**: 300. 1856.

=*O. trichophora* (Engelm.) Britton & Rose.

"On the mountains near Albuquerque," *Bigelow* in 1853.

Opuntia phaeacantha Engelm. in A. Gray, Mem. Amer. Acad. II. **4**: 52. 1849.

"On rocky hills about Santa Fe and on the Rio Grande," *Fendler* 250, in May and June, 1847.

The plant might have been collected almost anywhere about Santa Fe, for it is everywhere common, both upon the mesa and in the foothills.

Opuntia phaeacantha major Engelm. Proc. Amer. Acad. **3**: 293. 1856.

"In mountainous regions near Santa Fe."

Opuntia sphaerocarpa Engelm. Proc. Amer. Acad. **3**: 300. 1856.

"On the eastern declivity of the Sandia Mountains near Albuquerque," *Bigelow* in 1853.

Apparently this plant has not been collected since.

Opuntia stanlyi Engelm. in Emory, Mil. Recon. 157. *f.* 9. 1848.

This was collected by Emory on October 22. On this date he traveled along the Gila just on the present line between New Mexico and Arizona, so the plant may have been collected in either Territory. Doctor Engelmann says, quoting from the collector's notes: "Abundant on the Del Norte and Gila." The former of these localities must be wrong, for what is taken to be this plant, the only Opuntia of the type

found in New Mexico, has been found in the Territory only along the Gila. It is certainly not abundant along the Rio Grande. The specific name was given in honor of Mr. J. M. Stanly, who was the artist of the expedition and made the drawing upon which the description was based. *Opuntia emoryi* is probably a synonym of this species.

Opuntia stenochila Engelm. Proc. Amer. Acad. **3**: 296. 1856
"Zuni, western New Mexico," *Bigelow* in 1853.

Opuntia whipplei Engelm. Proc. Amer. Acad. **3**: 307. 1856.
"Elevated country about Zuni," *Bigelow* in 1853.

ONAGRACEAE.

Anogra neomexicana Small, Bull. Torrey Club **23**: 176. 1896.
"Sandy bed of a creek near the copper mines," *Wright* 1068 in 1851.

Epilobium fendleri Hausskn. Monogr. Epilob. 261. 1884.
"New Mexico," *Fendler* 217 of 1847, in part.

Epilobium novomexicanum Hausskn. Monogr. Epilob. 260. 1884.
"In Novo-Mexico ad Santa Fe," *Fendler* 217 of 1847, in part.

Gaura neomexicana Wooton, Bull. Torrey Club **25**: 307. 1898.
"On the South Fork of Tularosa Creek 3 miles east of the Mescalero Agency in the White Mountains," July 25, 1897, *E. O. Wooton*, at 2,000 meters.

Oenothera albicaulis gypsophila Eastwood, Proc. Calif. Acad. III. **1**: 73. 1897.
=*Anogra* sp.
White Sands, *T. D. A. Cockerell.*

Oenothera albicaulis runcinata Engelm. Amer. Journ. Sci. II. **34**: 334. 1862.
=*Anogra* sp.
"Near Santa Fe," *Fendler* in 1847.

Oenothera eximia A. Gray, Mem. Amer. Acad. II. **4**: 45. 1849.
"Along Santa Fe Creek," June, July, 1847, *Fendler* 228.

Oenothera fendleri A. Gray, Mem. Amer. Acad. II. **4**: 45. 1849.
=*Galpinsia fendleri* (A. Gray) Heller.
"Sunny hillsides at Santa Fe, and on the Rio del Norte," May to August, 1847, *Fendler* 230.

Oenothera pinnatifida integrifolia A. Gray, Mem. Amer. Acad. II. **4**: 44. 1849.
=*Anogra* sp.
"Santa Fe, and along the Cimarron, in gravelly soil or sand," June to August, 1847, *Fendler* 224.

Oenothera tubicula filifolia Eastwood, Proc. Calif. Acad. II. **1**: 72. 1897.
White Sands, *T. D. A. Cockerell.*

Oenothera wrightii A. Gray, Smiths. Contr. Knowl. **5**: 57. 1853.
=*Lavauxia wrightii* (A. Gray) Small.
"Stony hills, near the copper mines," *Wright* 1072 in 1851.

APIACEAE.

Archemora fendleri A. Gray, Mem. Amer. Acad. II. **4**: 56. 1849.
=*Oxypolis fendleri* (A. Gray) Heller.
"Margins of Santa Fe Creek, in fertile soil," June and July, 1847, *Fendler* 272.
Probably the commonest umbellifer in the Santa Fe Mountains, everywhere in wet places, especially along the edges of streams.

Cymopterus fendleri A. Gray, Mem. Amer. Acad. II. **4**: 56. 1849.
"Gravelly hills, Santa Fe," April, May, 1847, *Fendler* 274.

Cymopterus purpureus S. Wats. Amer. Nat. **7**: 4. 1873.
=*Aulospermum purpureum* (S. Wats.) Coulter & Rose.
"New Mexico," *Dr. Edward Palmer* in 1869.

Deweya? acaulis Torr. Pac. R. Rep. **4**: 94. 1856.
=*Aletes acaulis* (Torr.) Coulter & Rose.
"In crevices of rocks near Santa Antonita," October, 1853, *Bigelow.*

Eryngium sparganophyllum Hemsl. Hook. Icon. Pl. **6**: *pl. 2508.* 1897.
"Las Playas Springs, near the Sierra de los Animos," *Wright* 1103 in 1851.
This should be corrected to Sierra de las Animas.

Ligusticum scopulorum A. Gray, Proc. Amer. Acad. **7**: 347. 1867.
=*Conioselinum scopulorum* (A. Gray) Coulter & Rose.
"Santa Antonita," October, 1853, *Bigelow.*

Pseudocymopterus montanus multifidus Rydb. Bull. Torrey Club **31**: 574. 1904.
"Range between Sapello and Pecos Rivers," *T. D. A. Cockerell* in 1900.

Thaspium? montanum A. Gray, Mem. Amer. Acad. II. **4**: 57. 1849.
=*Pseudocymopterus montanus* (A. Gray) Coulter & Rose.
"Sunny declivities at the foot of mountains, along Santa Fe Creek," April to July, 1847, *Fendler* 276.
One of the commonest plants in the Santa Fe range, from near the base of the mountains almost to their summits, on open or thinly forested hillsides.

PRIMULACEAE.

Androsace glandulosa Wooton & Standley, Bull. Torrey Club **34**: 519. 1907.
"On the Middle Fork of the Rio Gila, August 5, 1900, at an altitude of about 2,100 meters, by E. O. Wooton."

Androsace platysepala Wooton & Standley, Bull. Torrey Club **34**: 519. 1907.
"At Kingston, Sierra County, New Mexico, on open hills, March 30, 1905, *O. B. Metcalfe,*" no. 1547.

Dodecatheon radicatum Greene, Erythea **3**: 37. 1895.
"Near Santa Fe," *Fendler* 549 in 1847.
This must have come from the mountains east of Santa Fe, probably along Santa Fe Creek, where the plant is common, at altitudes of about 2,400 to almost 3,600 meters.

Primula angustifolia helenae Pollard & Cockerell, Proc. Biol. Soc. Washington **15**: 179. 1902.
"Las Vegas Moutnains," *Miss Helen Blake.*

Primula ellisiae Pollard & Cockerell, Proc. Biol. Soc. Washington **15**: 178. 1902.
"Sandia Mountains," *Miss Charlotte Ellis.*

Primula rusbyi Greene, Bull. Torrey Club **8**: 122. 1881.
"On rich moist slopes, near the summits of the Mogollon Mountains," *H. H. Rusby* in August, 1881.

OLEACEAE.

Forestiera neomexicana A. Gray, Proc. Amer. Acad. **12**: 63. 1876.
=*Adelia neomexicana* (A. Gray) Kuntze.
"New Mexico," *Fendler* in 1847.

Fraxinus velutina Torr. in Emory, Mil. Recon. 149. 1848.
"Between the waters of the Del Norte and the Gila," *Emory* in 1847.
Emory speaks of having seen this tree first on October 15, the day on which he turned west from the valley of the Rio Grande just below Fray Cristobal.

GENTIANACEAE.

Amarella cobrensis Greene, Leaflets **1**: 56. 1904.
"At Santa Rita del Cobre," October 11, 1880, *E. L. Greene.*

Amarella revoluta Greene, Leaflets **1**: 55. 1904.
"Southern New Mexico, in the White Mountains," *E. O. Wooton* 552 in 1897.

Frasera paniculata Torr. Pac. R. Rep. **4**: 126. 1856.
"Sand bluffs, Inscription Rock, Zuni country," *Bigelow* in 1853.

Frasera venosa Greene, Pittonia **4**: 185. 1900.
"On hills near Santa Rita del Cobre," *E. L. Greene* in 1880.

Gentiana bigelovii A. Gray, Proc. Amer. Acad. **19**: 87. 1883.
"In the Sandia Mountains," *Bigelow* in 1853.

Gentiana rusbyi Greene in A. Gray, Syn. Fl. **2**^{1}: 406. 1886.
"Mogollon Mountains," *H. H. Rusby.*

APOCYNACEAE.

Apocynum laurinum Greene, Pittonia **5**: 65. 1902.
"Organ Mountains," *E. O. Wooton* 113 in 1897.

ASCLEPIADACEAE.

Acerates auriculata Engelm. in Torr. Bot. Mex. Bound. 160. 1859.
"Dry ravines near the copper mines, and along the Mimbres," June and July, *Bigelow.*

Asclepias arenaria Torr. Bot. Mex. Bound. 162. 1859.
"Sandy banks; Journado del Muerto, and on the upper Rio Gila," June and July. This should be corrected to Jornada del Muerto.

Asclepias involucrata Engelm. in Torr. Bot. Mex. Bound. 163. 1859.
"Sandy soils, on the Mimbres and near the copper mines," April and May, *Bigelow, Thurber* (other localities mentioned).

Asclepias nummularia Torr. Bot. Mex. Bound. 163. *pl. 45.* 1859.
"Copper Mines," April, *Bigelow, Thurber* (other localities mentioned).

Asclepias quinquedentata neomexicana Greene, Proc. Amer. Acad. **16**: 103. 1880.
"Rocky mountain side east of Pinos Altos," June 22, 1880, *E. L. Greene.*

Asclepias scaposa Vail, Bull. Torrey Club **25**: 171. 1897.
"Near Santa Rita," *Wright* in 1851.

Asclepias uncialis Greene, Bot. Gaz. **5**: 64. 1880.
"Open hilltops in southwestern New Mexico, about Silver City," April, *E. L. Greene.*

Asclepias verticillata leptophylla Torr. in Sitgreaves, Rep. Zuni & Colo. 164. 1854.
"Rio Laguna," *Dr. S. W. Woodhouse* in August, 1852.

Asclepias wrightii Greene, Proc. Amer. Acad. **16**: 102. 1880.
"Near Santa Rita," *Wright* in 1851; "between Silver City and Lone Mountain," July 10, 1880, *E. L. Greene.*

CONVOLVULACEAE.

Evolvulus oreophilus Greene, Leaflets **1**: 151. 1905.
"Dry hills west of Hillsboro, at 1,650 meters at base of Black Range," August, 1904, *O. B. Metcalfe* 1228.

POLEMONIACEAE.

Callisteris formosissima Greene, Leaflets **1**: 160. 1905.
=*Batanthes formosissima* Greene.
"Black Range," *O. B. Metcalfe* 1318 in 1904.

Collomia thurberi A. Gray, Proc. Amer. Acad. **8**: 261. 1870.
"Near the Santa Rita copper mines," *Thurber*.

Gilia bigelovii A. Gray, Proc. Amer. Acad. **8**: 265. 1870.
A new name for *G. dichotoma parviflora*.

Gilia dichotoma parviflora Torr. Bot. Mex. Bound. 147. 1859.
"Cook's Spring, near Frontera, Tex.," March and April, *Bigelow*, *Wright* in 1851.
Cooks Spring is in New Mexico, while Fronteras is Texan.

Gilia formosa Greene in Brand, Pflanzenreich IV. **250**: 119. 1907.
"Nordliches New Mexico: Aztec," April, 1899, *C. F. Baker* 535.

Gilia multiflora Nutt. Journ. Acad. Phila. n. ser. **1**: 154. 1848.
"Sandy hills along the borders of the Rio del Norte," *William Gambel*.

Gilia rigidula acerosa A. Gray, Proc. Amer. Acad. **10**: 280. 1870.
"Northern New Mexico to Arizona," *Fendler* and other collectors.

Phlox mesoleuca Greene, Leaflets **1**: 152. 1905.
"Dry foothills of the Black Range, New Mexico, at 6,600 feet," June 29, 1904, *O. B. Metcalfe* 1272.

Phlox nana Nutt. Journ. Acad. Phila. n. ser. **1**: 153. 1848.
"Rocky Mountains near Santa Fe," *William Gambel*.
The species is abundant in the immediate vicinity of Santa Fe, on the lower foothills up to about 2,340 meters.

Phlox nana glabella A. Gray, Proc. Amer. Acad. **10**: 257. 1870.
"New Mexico (near Santa Fe, etc.)."

Phlox speciosa stansburyi Torr. Bot. Mex. Bound. 145. 1859.
=*Phlox stansburyi* (Torr.) Heller.
"Gravelly hills near the Organ Mountains," *Bigelow*.
Not uncommon on the Organ foothills, on dry open slopes, flowering in spring.

Polemonium filicinum Greene, Pittonia **1**: 124. 1887.
"Pinos Altos Mountains," October, 1880, *E. L. Greene*.

Polemonium flavum Greene, Bot. Gaz. **6**: 217. 1881.
"Cold northward slopes of the highest Pinos Altos Mountains," September 15, 1880, *E. L. Greene*.

Polemonium pterospermum Nelson & Cockerell, Proc. Biol. Soc. Washington **16**: 45. 1903.
"Cloudcroft, Sacramento Mountains (Canadian Zone)," September, 1900, *T. D. A. Cockerell*.

HYDROPHYLLACEAE.

Conanthus carnosus Wooton, Bull. Torrey Club **25**: 262. 1898.
"White Sands," July 17, 1897, at 1,200 meters, *E. O. Wooton* 164.
Abundant about the edge of the sands, not on the dunes but in soil at their base.

Hydrophyllum occidentale fendleri A. Gray, Proc. Amer. Acad. **10**: 314. 1875.
=*Hydrophyllum fendleri* (A. Gray) Heller.
"Colorado, New Mexico."
Evidently based upon Fendler's specimens, collected in 1847 near Santa Fe. The plant is found everywhere in damp, shaded places in the Santa Fe Mountains, most commonly in bogs and along the edges of streams, flowering in June and July.

Phacelia caerulea Greene, Bull. Torrey Club **8**: 122. 1881.
"Southern New Mexico and Arizona," *E. L. Greene.*

Phacelia intermedia Wooton, Bull. Torrey Club **25**: 457. 1898.
"On the mesa near Las Cruces," April 10, 1893, *E. O. Wooton.*
One of the most abundant spring flowers in this locality, occurring sometimes in the Rio Grande Valley, and on the Organ foothills. *P. caerulea* is found in the same locality and flowers at the same time.

Phacelia neomexicana Thurber; Torr. Bot. Mex. Bound. 143. 1859.
"Pine woods near the copper mines," August, *Thurber;* and *Wright* 1577 in 1851.

Phacelia popei Torr. & Gray, Pac. R. Rep. **2**: 172. *pl. 10.* 1855.
"On the Llano Estacado and Pecos," March, April, 1854, *Pope.*
It is barely possible that this was collected in New Mexico, but it is more probable that it was found in Texas.

Phacelia rupestris Greene, Leaflets **1**: 152. 1905.
"Crevices of rocks, foothills of the Black Range," June 25, 1904, *O. B. Metcalfe* 1012.

Phacelia similis Wooton & Standley, Bull. Torrey Club **36**: 111. 1909.
"On the plains near Nutt Station, Sierra County," May 12, 1905, *O. B. Metcalfe* 1665.

HELIOTROPACEAE.

Euploca grandiflora Torr. in Emory, Mil. Recon. 147. 1848.
=*Euploca convolvulacea* Nutt.
"On the del Norte below Santa Fe," *Emory* in 1847.

Heliotropium xerophilum Cockerell, Bot. Gaz. **33**: 379. 1902.
"Albuquerque," December 3, 1901, *T. D. A. Cockerell.*

BORAGINACEAE.

Cryptanthe dicarpa A. Nelson, Proc. Biol. Soc. Washington **16**: 30. 1903.
"Mesilla Park," *T. D. A. Cockerell.*

Echinospermum pinetorum Greene, Proc. Amer. Acad. **17**: 224. 1882.
=*Lappula pinetorum* Greene.
"On the Pinos Altos Mountains," July and September, 1880, *E. L. Greene.*

Echinospermum ursinum Greene, Proc. Amer. Acad. **17**: 224. 1882.
=*Lappula ursina* Greene.
"On gravel beds of Bear Canyon in the Bear Mountains," *E. L. Greene* in 1880.

Eritrichium glomeratum hispidissimum Torr. Bot. Mex. Bound. 140. 1859.
=*Oreocarya hispidissima* (Torr.) Rydb.
"Common in New Mexico."

Krynitzkia fendleri A. Gray, Proc. Amer. Acad. **20**: 268. 1885.
= *Cryptanthe fendleri* (A. Gray) Greene.
"New Mexico," *Fendler* in 1847. (Other localities mentioned.)
Frequent upon the sandy mesas about Santa Fe, where Fendler first collected it.

Lappula leucantha Greene, Leaflets **1**: 152. 1905.
"Shady canyon of Iron Creek, Black Range," October 11, 1904, *O. B. Metcalfe* 1475.

Lithospermum cobrense Greene, Bot. Gaz. **6**: 157. 1881.
"Santa Rita del Cobre," *Wright, E. L. Greene.*

Lithospermum oblongum Greene, Pittonia **4**: 92. 1899.
"Hills about Aztec, northern New Mexico, growing among nut pines and cedars," April 26, 1899, *C. F. Baker.*

Lithospermum viride Greene, Bot. Gaz. **6**: 158. 1881.
"In the Mimbres Mountains, near Georgetown," 1877; and "on Swan Mountain, near Silver City, 1880," *E. L. Greene.*

Mertensia caelestina Nelson & Cockerell, Proc. Biol. Soc. Washington **16**: 46. 1903.
"Truchas Peaks, above timber line (Arctic-Alpine Zone)," 1902, *Wilmatte P. Cockerell* 40.

Mertensia pratensis Heller, Bull. Torrey Club **26**: 550. 1899.
"In a meadow in Santa Fe Canyon, 9 miles east of Santa Fe," June 2, 1897, *A. A. Heller* 3641.

Onosmodium thurberi A. Gray, Syn. Fl. **2**^{1}: 205. 1886.
"New Mexico," *Thurber* (other localities mentioned).
Probably collected by Thurber at Santa Rita.

Oreocarya lutescens Greene, Pittonia **4**: 93. 1899.
"Common on hills about Aztec," April 25, 1899, *C. F. Baker.*

VERBENACEAE.

Verbena canescens neomexicana A. Gray, Syn. Fl. **2**^{1}: 337. 1886.
"Borders of thickets near the copper mines," *Wright* in 1851, *Bigelow.*

Verbena confinis Greene, Pittonia **4**: 152. 1900.
"Organ Mountains," August 30, 1897, *E. O. Wooton* 409.
In the Organ foothills on dry, rocky slopes, and in the Rio Grande Valley.

Verbena officinalis hirsuta Torr. Bot. Mex. Bound. 128. 1859.
= *Verbena canescens neomexicana* A. Gray.
"Near the copper mines."

Verbena perennis Wooton, Bull. Torrey Club **25**: 263. 1898.
"Growing in crevices of rocks along the road about 2 miles west of the Mescalero Agency, in the White Mountains," July 21, 1897, at 1,800 meters, *E. O. Wooton* 187.

MENTHACEAE.

Brittonastrum greenei Briquet, Ann. Cons. Jard. Genève **6**: 157. 1902.
"Nouveau Mexique: Chama," September 3, 1899, *C. F. Baker* 567.
According to Dr. P. A. Rydberg this is a synonym of *Agastache pallidiflora* (Heller) Rydb.

Brittonastrum neomexicanum Briquet, Ann. Cons. Jard. Genève **6**: 158. 1902.
= *Agastache neomexicana* (Briq.)
"White Mountains, Lincoln County," August 1, 1897, *E. O. Wooton* 266.
Collected at the summit of the divide 9 miles northeast of the Mescalero Agency.

Cedronella cana lanceolata A. Gray, Syn. Fl. **2**[1]: 462. 1886.
=*Agastache lanceolata* (A. Gray).
"Mountains of New Mexico," *Wright, G. R. Vasey, H. H. Rusby.*

Cedronella rupestris Greene, Pittonia **1**: 164. 1888.
=*Agastache rupestris* (Greene).
"Mangas Springs, near Silver City," *E. L. Greene* in 1880.

Hedeoma ciliata Nutt. Journ. Acad. Phila. n. ser. **1**: 183. 1848.
"Santa Fe," *William Gambel.*

Hedeoma piperita oblongifolia A. Gray, Proc. Amer. Acad. **8**: 366. 1872.
"New Mexico and Arizona."

Hedeoma pulchella Greene, Leaflets **1**: 213. 1906.
"Limestone hills at about 6,600 feet near Kingston," May 18, 1905, *O. B. Metcalfe* 1599.

Monarda pectinata Nutt. Journ. Acad. Phila. n. ser. **1**: 182. 1848.
"Near Santa Fe," *William Gambel.*
Occasional on the sandy mesas and in the lower foothills about Santa Fe.

Monarda punctata humilis Torr. in Sitgreaves, Rep. Zuni & Colo. 166. 1854.
"On the Zuni," September, 1852, *Dr. S. W. Woodhouse.*

Monarda stricta Wooton, Bull. Torrey Club **25**: 263. 1898.
"On the divide 9 miles northeast of the Mescalero Agency in the White Mountains," August 1, 1897, at 2,100 meters, *E. O. Wooton* 267.

Salvia henryi A. Gray, Proc. Amer. Acad. **8**: 368. 1872.
"On the Mimbres," *Doctor Henry.*

Stachys rothrockii A. Gray, Proc. Amer. Acad. **12**: 82. 1876.
"Zuni Village," *J. T. Rothrock* in 1874.

SOLANACEAE.

Margaranthus purpurascens Rydb. Mem. Torrey Club **4**: 317. 1896.
"New Mexico," *H. H. Rusby* 307 in 1881.

Physalis fendleri A. Gray, Proc. Amer. Acad. **10**: 66. 1874.
"Rocks and plains of New Mexico," *Fendler* 683 in 1847; and *Wright* 1599 in 1851.

Physalis neomexicana Rydb. Mem. Torrey Club **4**: 325. 1896.
"New Mexico," *Fendler* 679 in 1847.
Collected about Santa Fe, probably. Common in moist places, especially frequent in cultivated land.

Solanum fendleri A. Gray, Amer. Journ. Sci. II. **22**: 285. 1856.
"In the northern part of New Mexico," *Fendler* in 1847 (other localities mentioned).

Solanum tuberosum boreale A. Gray, Syn. Fl. **2**[1]: 227. 1886.
A new name for *Solanum fendleri.*

SCROPHULARIACEAE.

Castilleja affinis minor A. Gray in Torr. Bot. Mex. Bound. 119. 1859.
=*Castilleja minor* A. Gray.
"Beds of exsiccated streams, near the Copper Mines," *Bigelow, Wright* 1494 in 1851.

Castilleja confusa × acuminata Cockerell, Bot. Gaz. **29**: 280. 1900.
"Harvey's Ranch near Las Vegas," *T. D. A. Cockerell.*

Castilleja inconstans Standley, Muhlenbergia **5**: 83. 1909.
"At Winsor's Ranch, on the headwaters of the Pecos River," June 29, 1908, *Standley* 4000.

Castilleja integra A. Gray in Torr. Bot. Mex. Bound. 119. 1859.
"Organ Mountains, east of El Paso," *Wright* (undistributed), *Bigelow*.
One of the commonest species of the southwest. It is very abundant in the type locality at the lower levels. It is altogether possible that what Doctor Gray referred to as the Organ Mountains are those now known as the Franklin Mountains, for the Organ range proper is not "east of El Paso," but north, and the Franklin and San Andreas ranges, the one lying to the south and the other to the north of the Organs, were not given separate names at that time.

Castilleja integra intermedia Cockerell, The Southwest, Cooper **2**: 134. 1900.
"Near Rowe," *T. D. A. Cockerell.*

Castilleja organorum Standley, Muhlenbergia **5**: 86. 1909.
"On the rocky sides of the Organ Mountains not far from Van Patten's Camp," June 9, 1906, *Standley*.

Castilleja wootonii Standley, Muhlenbergia **5**: 84. 1909.
"At Gilmore's Ranch on Eagle Creek in the White Mountains," August 25, 1907, *Wooton & Standley* 3411.

Conobea intermedia A. Gray in Torr. Bot. Mex. Bound. 117. 1859.
"Dry hills around the Copper Mines," *Wright* 1485 in 1851.

Maurandia wislizeni A. Gray in Torr. Bot. Mex. Bound. 111. 1859.
"Along the Rio Grande below Dona Ana," *Wislizenus* in 1846.
This handsome vine is common in sandy soil in the Rio Grande Valley in this locality.

Mimulus cordatus Greene, Leaflets **2**: 5. 1909.
"Bear Mountain, near Silver City," *O. B. Metcalfe* in 1903.

Mimulus rubellus A. Gray in Torr. Bot. Mex. Bound. 116. 1859.
"Wet ravines of the Organ Mountains and Copper Mines," *Bigelow*, *Wright* 1494 in 1851.
In the Organ Mountains this is a not infrequent plant, occurring chiefly in wet places in the bottoms of the canyons, but also on drier open slopes; flowering in early spring.

Pedicularis angustissima Greene, Leaflets **1**: 151. 1905.
"Mogollon Mountains," August 14, 1903, *O. B. Metcalfe* 496.

Pedicularis centranthera A. Gray in Torr. Bot. Mex. Bound. 120. 1859.
"New Mexico, and on Ben More," April, *Bigelow*.
Why the locality should be stated thus I do not know, for Ben Moore is in New Mexico.

Pedicularis fluviatilis Heller, Minn. Bot. Stud. **2**: 33. 1898.
"In a meadow 9 miles east of Santa Fe," *Heller* 3639 in 1897.
A plant very common in the mountains east of Santa Fe, very close to *P. canadensis* and hardly separable from that species.

Pedicularis mogollonica Greene, Leaflets **1**: 151. 1905.
"Mogollon Mountains," August 14, 1903, *O. B. Metcalfe* 496.

Pentstemon caudatus Heller, Minn. Bot. Stud. **2**: 34. 1898.
"Barranca, Taos County," *Heller* 3580 in 1897.
This is considered a variety of *P. angustifolius* Pursh by Dr. Louis Krautter in his paper, "A Comparative Study of the genus Pentstemon."

Pentstemon dasyphyllus A. Gray in Torr. Bot. Mex. Bound. 112. 1859.

"Stony hills of the Pecos, and Cook's Spring," *Wright* 1478.

The first of these localities is in Texas, the second in New Mexico. From Doctor Gray's statement I take it that both collections were distributed under the same number in spite of the fact that the two localities are more than 150 miles apart, such being a common practice of his.

Pentstemon fendleri Torr. & Gray, Pac. R. Rep. **2**: 168. *pl. 5.* 1855.

"On the Pecos and Llano Estacado," *Pope* in March and April of 1854.

If Pope's collection is the type the plant probably came from Texas; there is a bare possibility that it was collected in New Mexico. Doctor Gray in the Synoptical Flora considered this a synonym of *P. acuminatus* Dougl. Doctor Krautter gives it as a synonym of *P. nitidus* Dougl. It is probably distinct from both.

Pentstemon linarioides A. Gray in Torr. Bot. Mex. Bound. 112. 1859.

"Organ Mountains," *Parry;* also "Copper Mines and Las Animas," *Wright* 1472; *Thurber* 331, 1115.

Not infrequent in the Organ Mountains at the lower elevations, flowering in spring and early summer.

Pentstemon metcalfei Wooton & Standley, Torreya **9**: 145. 1909.

A new name for *P. puberulus* Wooton & Standley.

Pentstemon pauciflorus Greene, Bot. Gaz. **6**: 218. 1881.

"On a bluff of the Gila River, in the extreme southwestern part of New Mexico near the border of Arizona," August 30, 1880, *E. L. Greene.*

Doctor Krautter places this as a synonym of *P. lanceolatus* Benth. The statement that the type locality is in "the extreme southwestern part of New Mexico" is hardly correct, for the Gila flows from New Mexico into Arizona about 100 miles from the southwestern corner of New Mexico.

Pentstemon puberulus Wooton & Standley, Bull. Torrey Club **36**: 112. 1909.

=*Pentstemon metcalfei* Wooton & Standley.

"On shady slopes at the Lookout Mine, Sierra County," May 2, 1905, *O. B. Metcalfe* 1605.

Pentstemon thurberi Torr. Pac. R. Rep. **7**[3]: 15. 1857.

=*Leiostemon thurberi* (A. Gray) Greene.

"Burro Mountains," August, 1854, *Dr. Thomas Antisell.*

This seems to be the type locality; but Thurber's plants were collected in Sonora. Doctor Greene, very properly it seems to the writer, makes this the type of a new genus, for the group of plants to which it belongs is very different from true Pentstemon. This species has been considered by some a subspecies of *P. ambiguus* Torr.

Pentstemon virgatus A. Gray in Torr. Bot. Mex. Bound. 113. 1859.

"Santa Rita del Cobre, on the mountains," *Bigelow, Wright* 1476 in 1851.

Pentstemon whippleanus A. Gray, Proc. Amer. Acad. **6**: 73. 1862.

"Arroyas in the Sandia Mountains," *Bigelow* in 1853.

Scrophularia coccinea A. Gray in Torr. Bot. Mex. Bound. 111. 1856.

"At the base of a rocky ledge near the summit of a mountain, Santa Rita del Cobre," *Wright* 1470 in 1851.

A very rare plant, collected only once since 1851, apparently, by Mr. O. B. Metcalfe in this same region in 1904. His collection was distributed as a new species under Doctor Greene's approval, but the latter has never published the description of the new species.

Scrophularia montana Wooton, Bull. Torrey Club **25**: 308. 1898.

"On Eagle Creek near Gilmore's Ranch in the White Mountains," August 5, 1897, altitude 2,100 meters, *E. O. Wooton* 280.

Common in the White Mountains and in some of the other ranges of southern New Mexico. Collected several times since 1897 in the type locality.

OROBANCHACEAE.

Orobanche multiflora Nutt. Journ. Acad. Phila. n. ser. **1**: 179. 1848.

= *Myzorrhiza multiflora* (Nutt.) Rydb.

"Sandy ground along the borders of the Rio del Norte," September, *William Gambel.*

Orobanche xanthochroa A. Nelson & Cockerell, Bot. Gaz. **37**: 278. 1904.

"Pecos," "parasitic on roots of Quercus," June 7, 1903, *Dr. M. Grabham.*

MARTYNIACEAE.

Martynia parviflora Wooton, Bull. Torrey Club **25**: 453. 1898.

"At San Augustine Ranch at the base of the Organ Mountains," August 30, 1897, *E. O. Wooton* 580, altitude 1,350 meters (other localities and collections mentioned).

This ranch is on the east side of the Organ Mountains just south of Organ Pass.

RUBIACEAE.

Galium acutissimum A. Gray, Proc. Amer. Acad. **7**: 350. 1867.

"Between the Rio del Norte and New Mexico," *Newberry.*

Just what locality is thus described it is impossible to state. It is probable that the plant was collected about the northern edge of the Territory.

Galium asperrimum A. Gray, Mem. Amer. Acad. II. **4**: 60. 1849.

"Wet places near irrigating ditches, Santa Fe," June, 1847, *Fendler* 289.

Galium brandegei A. Gray, Proc. Amer. Acad. **12**: 58. 1876.

"Valley of the Rio Grande, New Mexico, on the Los Pinos trail," at 2,700 meters, September, 1875, *T. S. Brandegee.*

What and where the Los Pinos trail may be I do not know; very possibly it is not in New Mexico.

Galium fendleri A. Gray, Mem. Amer. Acad. II. **4**: 60. 1849.

"Sunny side of high mountains, valley of Santa Fe Creek," July 1847, *Fendler* 288.

Oldenlandia greenei A. Gray, Proc. Amer. Acad. **19**: 77. 1883.

"Pinos Altos Mountains," *E. L. Greene* 149 in 1880.

CAPRIFOLIACEAE.

Sambucus melanocarpa A. Gray, Proc. Amer. Acad. **19**: 76. 1883.

"First collected in New Mexico," *Fendler* in 1847 (other localities and collectors mentioned).

Probably collected by Fendler around Santa Fe. What appears to be this species grows along Santa Fe Creek just above the town.

Sambucus neomexicana Wooton, Bull. Torr. Club **25**: 309. 1898.

"At Ruidoso Crossing in the White Mountains," August 2, 19, 1897, *E. O. Wooton* 648.

Symphoricarpos rotundifolius A. Gray, Smiths. Contr. Knowl. **5**: 66. 1853.

"Sides of mountains around the copper mines," *Wright* 1388 in 1851.

CUCURBITACEAE.

Cucurbita digitata A. Gray, Smiths. Contr. Knowl. **5**: 60. 1853.

"Prairies, in loose, sandy soil, between the copper mines and Conde's Camp," *Wright* 1088 in 1851.

Apparently rare, but occasionally collected since.

Echinopepon confusus Rose, Contr. Nat. Herb. **5**: 116. 1897.

"Pinos Altos Mountains," September 16, 1890, *E. L. Greene.*

Megarrhiza gilensis Greene, Bull. Torrey Club **8**: 97. 1881.

= *Micrampelis gilensis* (Greene) Britton.

"In deep sand on the banks of the upper Gila River and its tributaries, climbing high over willows, flowering in February and March," *E. L. Greene.*

Sicyos ampelophyllus Wooton & Standley, Bull. Torrey Club **36**: 111. 1909.

"At Kingston, Sierra County," "in cultivated ground," August 5, 1904, *O. B. Metcalfe* 1195, altitude 2,030 meters.

Sicyos glaber Wooton, Bull. Torrey Club **25**: 310. 1898.

"In the Organ Mountains south of San Augustine Ranch," September 1, 1897, *E. O. Wooton* 606, altitude 1,500 meters.

The type locality is on the east side of the range, but this plant is common throughout the Organs, in the damper parts of the canyons.

AMBROSIACEAE.

Franseria tenuifolia A. Gray, Mem. Amer. Acad. II. **4**: 80. 1849.

=*Gaertneria tenuifolia* (A. Gray) Kuntze.

"Poñi Creek, between Bent's Fort and Santa Fe; also at Santa Fe," July to October, 1847, *Fendler* 406.

Bent's Fort was on the Arkansas in Colorado.

Xanthium commune wootoni Cockerell, Proc. Biol. Soc. Washington **16**: 9. 1903.

"At Española, N. M., and Las Vegas, N. M.," *T. D. A. Cockerell.*

This is but a variant of *X. commune*, for Professor Cockerell reports that he later found the fruit of the typical form and the fruit of subspecies *wootoni* on the same plant.

ASTERACEAE.

Achillea laxiflora Pollard & Cockerell, Proc. Biol. Soc. Washington **15**: 179. 1902.

"In the Sandia Mountains," altitude 2,400 meters, *Miss Charlotte Ellis.*

Actinella argentea A. Gray, Mem. Amer. Acad. II. **4**: 100. 1849.

= *Tetraneuris argentea* (A. Gray) Greene.

"Gravelly and stony hills around Santa Fe," April to June, 1847, *Fendler* 457.

Abundant in the type locality.

Actinella bigelovii A. Gray, Smiths. Contr. Knowl. **5**: 96. 1853.

= *Macdougalia bigelovii* (A. Gray) Heller.

"On mountains near the copper mines," *Bigelow.*

Actinella depressa pygmaea Torr. & Gray, in A. Gray, Mem. Amer. Acad. II. **4**: 100. 1849.

= *Tetraneuris* sp.

"Raton Mountains," April, 1848, *A. Gordon.*

The Raton Mountains are on the boundary between Colorado and New Mexico, and this plant may have been collected in either.

Actinella leptoclada A. Gray, Pac. R. Rep. **4**: 107. 1856.
=*Tetraneuris leptoclada* (A. Gray) Greene.
"In mountains and rocky places near Santa Antonita," October, 1853, *Bigelow*.

Actinella richardsonii floribunda A. Gray, Mem. Amer. Acad. II. **4**: 101. 1849.
=*Hymenoxys floribunda* (A. Gray) Cockerell.
"Rocky hills, as well as plains and creek bottoms, around Santa Fe," June and July, 1847, *Fendler* 460.
One of the most abundant plants on the gravelly hills around Santa Fe, growing only at the lower altitudes.

Actinella rusbyi A. Gray, Proc. Amer. Acad. **19**: 33. 1883.
=*Hymenoxys rusbyi* (A. Gray) Cockerell.
"Grassy slopes of the Mogollon Mountains," September, 1881, *H. H. Rusby*.

Actinella scaposa mutica A. Gray, Mem. Amer. Acad. II. **4**: 101. 1849.
=*Tetraneuris* sp.
"Woodlands from Pecos to San Miguel," August, 1847, *Fendler* 466.

Actinella vaseyi A. Gray, Proc. Amer. Acad. **17**: 219. 1882.
=*Hymenoxys vaseyi* (A. Gray) Cockerell.
"In the Organ Mountains," *G. R. Vasey*.
Occurs on the foothills of the Organs, not extending down upon the mesa or into the Rio Grande Valley.

Adenophyllum wrightii A. Gray, Smiths. Contr. Knowl. **5**: 92. 1853.
=*Hymenatherum neomexicanum* A. Gray.
"Hillsides near the copper mines," *Wright* 1280 in 1851.

Amauria P **dissecta** A. Gray, Mem. Amer. Acad. II. **4**: 104. 1849.
=*Villanova dissecta* (A. Gray) Rydb.
"A few miles east of the Mora River," August, 1847, *Fendler* 537.
This plant, later named *Villanova chrysanthemoides* and *Bahia chrysanthemoides* by Doctor Gray, is common in the mountain ranges of New Mexico, growing usually at 2,100 and 2,400 meters. It has never been collected in its type locality since the days of Fendler.

Antennaria latisquamea Greene, Leaflets **1**: 145. 1905.
=*Antennaria anacleta* Greene, Leaflets **1**: 200. 1906, the latter being merely a new name for the former, which was a homonym.
"In the Black Range, New Mexico, on a shaded slope," September 30, 1904, *O. B. Metcalfe* 1433, altitude 3,000 meters.

Antennaria marginata Greene, Pittonia **3**: 290. 1898.
"New Mexico," *Dr. Edward Palmer*.

Aplopappus spinulosus canescens A. Gray, Mem. Amer. Acad. II. **4**: 75. 1849.
=*Sideranthus* sp.
"Between Santa Fe and the Rio del Norte," May, 1847, *Fendler* 395.

Artemisia franserioides Greene, Bull. Torrey Club **10**: 42. 1883.
"In deep shady woods of Pseudotsuga near the summits of the Pinos Altos Mountains," *E. L. Greene*.
One of the most distinct of all our species of Artemisia, found in most of the mountain ranges of New Mexico, as well as in southern Colorado.

Artemisia microcephala Wooton, Bull. Torrey Club **25**: 455. 1898.
"In the Organ Mountains," September 1, 1897, *E. O. Wooton* 504.

Artemisia parryi A. Gray, Proc. Amer. Acad. **7**: 361. 1867.

"Huefano Mts., New Mexico," *Dr. C. C. Parry* in September, 1867.

This must have been collected in Colorado, for there is a range of this name in that State and none, so far as the writer knows, in New Mexico. The name should certainly read Huerfano instead of Huefano.

Artemisia wrightii A. Gray, Proc. Amer. Acad. **19**: 48. 1883.

"Mountains around the copper mines," *Wright* 1279 in 1851.

Aster bigelovii A. Gray, Pac. R. Rep. **4**: 97. *pl. 10.* 1856.

=*Machaeranthera bigelovii* (A. Gray) Greene.

"Arroyos in the Sandia Mountains," *Bigelow* in 1853.

Aster blepharophyllus A. Gray, Smiths. Contr. Knowl. **5**: 77. 1853.

"Las Playas Springs," *Wright* 1164 in 1851.

Aster boltoniae Greene, Pittonia **3**: 248. 1897.

"In irrigated fields and along ditches in western Texas and southern New Mexico," collected by M. E. Jones at El Paso, and E. O. Wooton in the Mesilla Valley.

So the plant is founded, in part at least, upon New Mexican material. It is found only in the valley of the Rio Grande, usually along the irrigating ditches and in places where the ditch water overflows.

Aster ericaefolius tenuis A. Gray, Syn. Fl. 1^2: 198. 1886.

=*Leucelene* sp.

"New Mexico," *Wright.*

Aster fendleri A. Gray, Mem. Amer. Acad. II. **4**: 66. 1849.

"On the Ocaté Creek," August, 1847, *Fendler* 372.

Aster hesperius wootonii Greene, Bull. Torrey Club **25**: 119. 1898.

=*A. wootonii* Greene.

"Eagle Creek, White Mountains," August 12, 1897, *E. O. Wooton* 329.

A common and showy plant along Eagle Creek in the vicinity of Gilmores Ranch growing in wet places along the edge of the stream, at an altitude of about 2,230 meters.

Aster woodhousei Wooton, Bull. Torrey Club **25**: 458. 1898.

"First collected near the Pueblo Indian village of Zuni," September, 1851, *Dr. S. W. Woodhouse.*

Bahia biternata A. Gray, Smiths. Contr. Knowl. **5**: 95. 1853.

"Gravelly hills near Ojo de Gavilan," *Wright* 1256 in 1851.

Unlike *B. dissecta*, this plant grows upon the dry mesas, especially along the dry water courses known as arroyos.

Baileya multiradiata Harv. & Gray in Emory, Mil. Recon. 144. *pl. 6.* 1848.

"Along the Del Norte," *Emory.*

No plant is more common than this upon the sandy mesas bordering the valley of the Rio Grande in southern New Mexico. It is found in the valley itself, but usually only on the sandhills.

Bidens cognata Greene, Leaflets **1**: 149. 1905.

"Black Range, New Mexico, at 9,500 feet," September 30, 1904, *O. B. Metcalfe* 1436.

Bidens heterosperma A. Gray, Smiths. Contr. Knowl. **5**: 90. 1853.

"Near the copper mines," *Wright* in 1851.

Bidens tenuisecta A. Gray, Mem. Amer. Acad. II. **4**: 86. 1849.

"Margins of Poñi Creek (between Bent's Fort and Santa Fe)," October, 1846, *Fendler* 449.

No one has collected in this locality since 1847.

Bigelovia graveolens appendiculata Eastwood, Proc. Calif. Acad. III. **1**: 74. *pl. 6*. 1897.

=*Chrysothamnus appendiculatus* (Eastw.) Heller.

"White Sands," *T. D. A. Cockerell.*

Bigelovia graveolens latisquamea A. Gray, Proc. Amer. Acad. **8**: 645. 1873.

=*Chrysothamnus latisquameus* (A. Gray) Greene.

"New Mexico," *Bigelow.*

Brickellia betonicaefolia A. Gray, Smiths. Contr. Knowl. **5**: 72. 1853.

=*Coleosanthus betonicaefolius* (A. Gray) Kuntze.

"Hills, near the copper mines," *Wright* 1137 in 1851.

Brickellia fendleri A. Gray, Mem. Amer. Acad. II. **4**: 63. 1849.

=*Eupatorium fendleri* A. Gray.

"Foot of mountains, on the sunny side along the creek, 11 miles above Santa Fe," July, 1847, *Fendler* 347.

Abundant on cliffs and in the crevices of rocks in the mountains east of Santa Fe, flowering in late summer.

Brickellia rusbyi A. Gray, Syn. Fl. 1^2: 106. 1886.

=*Coleosanthus rusbyi* (A. Gray) Kuntze.

"Mountains of New Mexico," *H. H. Rusby* (other localities and collectors mentioned).

Brickellia wrightii A. Gray, Smiths. Contr. Knowl. **5**: 72. 1853.

=*Coleosanthus wrightii* (A. Gray) Britton.

"Hills, near the copper mines," *Wright* 1139 in 1851.

Bulbostylis annua Nutt. Journ. Acad. Phila. n. ser. **1**: 179. 1848.

=*Psathyrotes annua* (Nutt.) A. Gray.

"Rocky Mountains near Santa Fe," *William Gambel.*

Such is the locality given by Nuttall, but there is reason to believe that it is incorrect. The plant seems not to have been collected in New Mexico since, and the genus is one which reaches its fullest development farther west. This species occurs in Utah and Arizona and westward.

Carduus perennans Greene, Bull. Torrey Club. **25**: 125. 1898.

"White Mountains, at 7,000 feet," August 12, 1897; and in "Organ Mountains," July 7, 1897, *E. O. Wooton.*

Frequent in the White Mountains, on open slopes, but of rare occurrence, apparently, in the Organs.

Carpochaete bigelovii A. Gray, Smiths. Contr. Knowl. **3**: 89. 1852.

"On the boundary between Mexico and New Mexico," *Bigelow.*

Just what locality Doctor Gray understood by this I can not say, but certain statements of his in the second part of Plantae Wrightianae lead one to believe that the original specimens were collected either in the Organ Mountains or at the Copper Mines. In the herbarium of the New Mexico Agricultural College there are specimens from the Organ Mountains, only, and it seems probable that it was in these mountains that Bigelow first collected the plant. Here it is one of the commonest of the spring flowers, blooming in April and May, frequenting the drier slopes and more open parts of the canyons.

Chrysopsis fulcrata Greene, Bull. Torrey Club **25**: 119. 1898.

"At various places in the White Mountains and Organ Mountains, at elevations of 6,000 to 6,500 feet," *E. O. Wooton* 510, 511, 512, in 1897.

No. 510 was collected in Fillmore Canyon in the Organ Mountains. It is common in the range, growing in crevices in the faces of cliffs.

Chrysothamnus bakeri Greene, Pittonia **4**: 152. 1900.

"Near Chama," September 5, 1899, *C. F. Baker*.

Chrysothamnus confinis Greene, Pittonia **5**: 62. 1902.

"White Mountains," *E. O. Wooton* 379, August 23, 1897.

Collected at Blazers Mill; a common shrub along the ditch banks here.

Chrysothamnus newberryi Rydb. Bull. Torrey Club **31**: 652. 1904.

"Cañon Largo," *Doctor Newberry*.

Cirsium neomexicanum A. Gray, Smiths. Contr. Knowl. **5**: 101. 1853.

=*Carduus neomexicanus* (A. Gray) Greene.

"Side of the Organ Mountains," *Wright* 1417.

The most frequent species in this locality, occurring in the foothills and at the lower levels, on open, rocky slopes.

Cirsium ochrocentrum A. Gray, Mem. Amer. Acad. II. **4**: 110. 1849.

=*Carduus ochrocentrus* (A. Gray) Greene.

"Mountain sides around Santa Fe," July, 1847, *Fendler* 486.

Collected, no doubt, on the slopes just east of Santa Fe, where it is conspicuous. It extends to elevations of about 2,250 meters. Usually it is white-flowered, but occasionally pale purple heads are seen.

Clavigera brachyphylla A. Gray, Mem. Amer. Acad. II. **4**: 63. 1849.

=*Coleosanthus brachyphyllus* (A. Gray) Kuntze.

"Foot of high rocks, 2 miles east of the Mora River," August, 1847, *Fendler* 339.

Apparently very local in its distribution, for it has not been observed in the mountains just to the southwest.

Coleosanthus ambigens Greene, Bull. Torrey Club **25**: 118. 1898.

"White Mountains," August 13, 1897, *E. O. Wooton* 335.

The exact locality was at Gilmores Ranch.

Coleosanthus axillaris Greene, Leaflets **1**: 149. 1905.

"Southward slopes of hills of the Black Range, New Mexico, at about 6,000 feet," *O. B. Metcalfe* 1446, in 1904.

According to the label, the exact locality was on a rocky hillside 1 mile west of Hillsboro, at an altitude of about 1,620 meters, and the date of collection October 2, 1904.

Coleosanthus melissaefolius Greene, Leaflets **1**: 150. 1905.

"Organ Mountains, New Mexico, at 4,900 feet," September 1, 1897, *E. O. Wooton*.

A low shrub, abundant in the canyons and drier parts of the Organs; very closely related to *C. wrightii*, and perhaps hardly distinct.

Coleosanthus modestus Greene, Pittonia **4**: 230. 1900.

"Gray's Peak, Lincoln County," July 25, 1900, *F. S. Earle*.

The type number seems to be 490.

Coleosanthus nepetaefolius Greene, Pittonia **4**: 237. 1900.

"Salado Cañon, near Gray," September 2, 1900, *F. S. Earle*.

Coleosanthus wootoni Greene, Bull. Torrey Club **24**: 511. 1897.

"Organ Mountains," September, 1892, *E. O. Wooton*.

Common in the lower parts of the Organs, on dry slopes.

Dieteria asteroides Torr. in Emory, Mil. Recon. 142. 1848.

=*Machaeranthera asteroides* (Torr.) Greene.

"Elevated land between the del Norte and the waters of the Gila," *Emory* in 1847.

In Emory's journal, in the entry for October 16, we read: "We commenced the approach to the Mimbres Mountains over a beautiful rolling country, traversed by streams of pure water * * * a new species of dieteria, like an aster, with fine purple flowers." This must have been somewhere in the central or southwestern part of Sierra County.

Dieteria gracilis Nutt. Journ. Acad. Phila. n. ser. 1: 177. 1848.

=*Sideranthus gracilis* (Nutt.) Rydb.

"Near Santa Fe," August, *William Gambel.*

One of the most abundant plants on the sandy mesas around Santa Fe.

Diplopappus ericoides hirtella A. Gray, Mem. Amer. Acad. II. 4: 69. 1849.

=*Leucelene hirtella* (A. Gray) Rydb.

"Sides of ravines in arid places, Santa Fe; also on the Rio del Norte," May, June, 1847, *Fendler* 348.

Erigeron arenarius Greene, Bull. Torrey Club 25: 121. 1898.

"Sand hills near Mesilla," June 17, 1897, *E. O. Wooton* 23.

Not very abundant, on dunes of almost pure sand, in the Mesilla Valley. Flowers in the middle of summer. The only species of Erigeron found in the valley, the others here, as in most other places in the Territory, being confined to the mountains. It grows along with one of the species of Aphanostephus with which it is easily confused.

Erigeron canus A. Gray, Mem. Amer. Acad. II. 4: 67. 1849.

"Dry places on gravelly hills and at the foot of mountains, Santa Fe," May, June, 1847, *Fendler* 375.

Erigeron cinereus A. Gray, Mem. Amer. Acad. II. 4: 68. 1849.

Three numbers are mentioned, 374, 380, and 385, all collected by Fendler at various places around Santa Fe in 1847. These are designated as varieties α, β, and γ.

Erigeron deustus Greene, Leaflets 1: 211. 1906.

"West fork of the Rio Gila," August 28, 1903, *O. B. Metcalfe.*

Erigeron flagellaris A. Gray, Mem. Amer. Acad. II. 4: 68. 1849.

"Low, moist places along Santa Fe Creek," May, June, 1847, *Fendler* 381.

Everywhere in moist meadows and on hillsides in the mountains east of Santa Fe.

Erigeron formosissimus Greene, Bull. Torrey Club 25: 121. 1898.

"From an altitude of 10,000 feet on Sierra Blanca Peak of the White Mountains," August 16, 1897, *E. O. Wooton* 352.

"Sierra Blanca Peak" is more commonly spoken of as White Mountain Peak.

Erigeron neomexicanus A. Gray, Proc. Amer. Acad. 19: 2. 1883.

"On mountains at the copper mines," *Wright.*

Erigeron pecosensis Standley, Muhlenbergia 5: 29. 1909.

"In a wet meadow along the Pecos River near Winsor's ranch," July 16, 1908, *Standley* 4358; altitude about 2,460 meters.

Erigeron platyphyllus Greene, Leaflets 1: 145. 1905.

"Santa Rita Mountain," October 9, 1904, *O. B. Metcalfe* 1469.

Erigeron pulcherrimus Heller, Bull. Torrey Club 25: 200. 1898.

"On sandy hills 10 miles north of Santa Fe," June 5, 1897, *A. A. Heller* 3664; altitude 1,740 meters.

Erigeron rusbyi A. Gray, Syn. Fl. 1^2: 217. 1886.
"Mogollon Mountains," *H. H. Rusby.*

Erigeron setulosus Greene, Pittonia **4**: 319. 1901.
"Aztec," *C. F. Baker.*

Erigeron stenophyllus A. Gray, Pac. R. Rep. **4**: 98. 1856.
"On hillsides and steep banks of the Pecos," October, 1853, *Bigelow.*

Erigeron wootonii Rydb. Bull. Torrey Club **33**: 153. 1906.
"Valley of Santa Fe Creek, near irrigating ditches," May to July, 1847, *Fendler* 385.

Eriocarpum serratum Greene, Bull. Torrey Club **25**: 119. 1898.
=*Sideranthus serratus* (Greene).
"White Mountains at 6,800 feet," July 30, 1897, *E. O. Wooton* 251.
Collected on the south fork of Tularosa Creek east of the Mescalero Agency.

Eriocarpum wootonii Greene, Bull. Torrey Club **25**: 120. 1898.
=*Sideranthus wootonii* (Greene).
"On the White Mountains, at 6,500 feet elevation," August 19, 1897, *E. O. Wooton* 518.
Collected on the divide between the Gavilan and Eagle creeks. Only four specimens were distributed.

Galinsoga parviflora semicalva A. Gray, Mem. Amer. Acad. II. **4**: 98. 1853.
"Side of mountains at the copper mines," *Wright* 1268 in 1851.

Gnaphalium strictum A. Gray, Pac. R. Rep. **4**: 110. 1856.
"Banks of the Rio Grande, near Albuquerque," October, 1853, *Bigelow.*

Grindelia scabra Greene, Bull. Torrey Club **25**: 120. 1898.
"White Mountains," August 21, 1897, *E. O. Wooton* 224, 372; altitude, 1,900 meters.
A showy plant of the higher levels of the White Mountains.

Grindelia subincisa Greene, Pittonia **4**: 154. 1900.
"Chama," September 5, 1899, *C. F. Baker.*
The type number appears to be 683.

Gutierrezia filifolia Greene, Pittonia **4**: 55. 1899.
"Round Mountain," August 24, 1897, *E. O. Wooton.*

Gutierrezia furfuracea Greene, Repert. Sp. Nov. Fedde **7**: 195. 1909.
"At Cactus Flat, in the region of the upper Rio Gila, southeastern New Mexico, October 13, 1908, by Mr. E. A. Goldman."
This is in southwestern New Mexico instead of southeastern.

Gutierrezia glomerella Greene, Pittonia **4**: 54. 1899.
"From the Organ Mountains," in 1897, *E. O. Wooton* 449.
One of the commonest plants in this region, a pernicious weed of the ranges. It is found from the foothills of the Organs down across the surrounding mesas, occasionally extending even into the Rio Grande Valley.

Gutierrezia goldmanii Greene, Repert. Sp. Nov. Fedde **7**: 195. 1909.
"From the Florida Mountains, in extreme southern New Mexico," September 8, 1908, *E. A. Goldman*, altitude 1,740 meters.

Gutierrezia juncea Greene, Pittonia **4**: 56. 1899.
"Near Gray," August, 1898, *Miss Josephine Skehan* (other localities mentioned).

Gutierrezia linearis Rydb. Bull. Torrey Club **31**: 647. 1904.
"Gray, Lincoln County," in 1900, *F. S. Earle* 474.

Gutierrezia longifolia Greene, Pittonia **4**: 54. 1899.
"In the White Mountains," August, 1897, *E. O. Wooton* 377.
Collected near Blazers Mill, just below the Mescalero Agency.

Gutierrezia tenuis Greene, Pittonia **4**: 55. 1899.
"Foothills of the mountains back of Silver City," September 30, 1880, *E. L. Greene.*

Helianthella majuscula Greene, Leaflets **1**: 148. 1905.
"Black Range," 1904, *O. B. Metcalfe* 1435.

Heterospermum tagetinum A. Gray, Mem. Amer. Acad. II. **4**: 87. 1849.
"Woodlands, 12 miles west of Las Vegas," August, 1847, *Fendler* 534.
According to Doctor Gray, this is a synonym of *H. pinnatum* Cav.

Hymenatherum neomexicanum A. Gray, Proc. Amer. Acad. **19**: 40. 1883.
A new name for *Adenophyllum wrightii* A. Gray.

Hymenoclea monogyra Torr. & Gray, Mem. Amer. Acad. II. **4**: 79. 1849.
"Along the valley of the Gila," *Emory* in 1847.
This may have been collected in either Arizona or New Mexico, for Emory traveled along the Gila in both Territories. He must have seen the plant first in New Mexico, since it is abundant there.

Hymenopappus arenosus Heller, Bull. Torrey Club **25**: 200. 1898.
"Near Española, Santa Fe County," May 17, 1897, *A. A. Heller* 3542, altitude 1,680 meters.

Hymenopappus flavescens A. Gray, Mem. Amer. Acad. II. **4**: 97. 1849.
"Between San Miguel and Las Vegas," August, 1847, *Fendler* 464.

Hymenopappus integer Greene, Pittonia **3**: 249. 1897
"Mogollon Mountains," *H. H. Rusby* in 1881.

Hymenopappus robustus Greene, Bull. Torrey Club **9**: 63. 1882.
"Common on the sandy plains of New Mexico."

Hymenoxys chrysanthemoides juxta Cockerell, Bull. Torrey Club **31**: 503. 1904.
"Mangas Springs," June 9, 1903, *O. B. Metcalfe* 118, altitude 1,430 meters.

Hymenoxys chrysanthemoides mearnsii Cockerell, Bull. Torrey Club **31**: 506. 1904.
"Dog Spring," May 26, 1892, *E. A. Mearns.*

Hymenoxys metcalfei Cockerell, Bull. Torrey Club **31**: 492. 1904.
"Burro Mountains," 1903, *O. B. Metcalfe* 170.

Hymenoxys olivacea Cockerell, Bull. Torrey Club **31**: 297. 1904.
"Hanover Hills," August 9, 1895, *Miss A. Isabel Mulford.*

Laciniaria lancifolia Greene, Bull. Torrey Club **25**: 118. 1898.
"In marshy land at 6,300 feet in the White Mountains," July 31, 1897, *E. O. Wooton* 254.
Collected on the South Fork of Tularosa Creek at the Mescalero Agency.

Laphamia cernua Greene, Bull. Torrey Club **25**: 122. 1898.
"Organ Mountains, at 6,500 feet altitude," September 4, 1897, *E. O. Wooton* 476.
Apparently very rare, for it has not been collected except this once.

Layia neomexicana A. Gray, Smiths. Contr. Knowl. **5**: 98. 1853.
"Near Santa Barbara."
Possibly the label of this plant was wrong, for the genus Layia is a Californian one, and this plant has not been collected in New Mexico in late years.

Leucelene ericoides serotina Greene, Pittonia **3**: 149. 1896.
"In New Mexico."

Linosyris bigelovii A. Gray, Pac. R. Rep. **4**: 98. 1856.
=*Chrysothamnus bigelovii* (A. Gray) Greene.
"Hills and arroyos, Cienegella, above Albuquerque," *Bigelow* in 1853.
Just what or where Cienegella is I have been unable to determine. The name is evidently misspelled.

Machaeranthera canescens latifolia A. Gray, Smiths. Contr. Knowl. **5**: 75. 1853.
"Near the copper mines," *Wright* 1152 in 1851.

Machaeranthera linearis Greene, Bull. Torrey Club **24**: 511. 1897.
"Sandy fields of the Mesilla Valley, flowering in autumn," *E. O. Wooton.*
One of the commonest plants in the Rio Grande Valley in this locality; a troublesome weed in cultivated fields.

Machaeranthera tanacetifolia humilis A. Gray, Smiths. Contr. Knowl. **5**: 74. 1853.
= *Machaeranthera humilis* (A. Gray) Standley.
"Near Ojo de Gavilan," *Wright* 1151 in 1851.

Pectis taxifolia Greene, Leaflets **1**: 148. 1905.
"Black Range," 1904, *O. B. Metcalfe* 1440.
This seems indistinguishable from *Chrysactinia mexicana* A. Gray.

Pericome caudata A. Gray, Smiths. Contr. Knowl. **5**: 82. 1853.
"Among rocks, on the sides of mountains, at the copper mines," *Wright* 1195 in 1851.

Perityle coronopifolia A. Gray, Smiths. Contr. Knowl. **5**: 82. 1853.
"Sides of the mountains at the copper mines," *Wright* 1196 in 1851.

Pyrrocoma amplectens Greene, Leaflets **2**: 10. 1909.
"Mogollon Mountains," *O. B. Metcalfe* in 1903.

Ratibida tagetes cinerea Standley, Muhlenbergia **5**: 30. 1909.
"At Harrison's ranch near Pecos, New Mexico, August 21, 1908, *Standley* 5156, growing on a dry hillside at an altitude of about 6,700 feet."

Sanvitalia aberti A. Gray, Mem. Amer. Acad. II. **4**: 87. 1849.
"Woodlands, between Santa Fe and Pecos," August, 1847, *Fendler* 538.
Very abundant in this region, growing on the low hills in dry places.

Schkuhria neomexicana A. Gray, Mem. Amer. Acad. II. **4**: 96. 1849.
=*Achyropappus neomexicanus* A. Gray.
"Margin of fields, Santa Fe," July, August, 1847, *Fendler* 458.
Not uncommon on the low hills about Santa Fe, but not extending into the mountains.

Senecio bigelovii A. Gray, Pac. R. Rep. **4**: 111. 1856.
"In mountain arroyos, near Camp Douglas," October, 1853, *Bigelow.*
I have not been able to determine just where Camp Douglas was, but it was somewhere in central New Mexico, between Albuquerque and the Pecos River.

Senecio canovirens Rydb. Bull. Torrey Club **27**: 187. 1900.
"White Mountains," *E. O. Wooton* 244 in 1897 (other localities and collectors mentioned).

Senecio cardamine Greene, Bull. Torrey Club **8**: 98. 1881.
"On cold northward slopes of the higher Mogollon Mountains," *E. L. Greene* in April, 1881.

Senecio cynthioides Greene, Leaflets **1**: 212. 1906.
"Hillsides along Turkey Creek in the Mogollones," August 23, 1903, *O. B. Metcalfe.*

Senecio fendleri A. Gray, Mem. Amer. Acad. II. **4**: 108. 1849.

"Foot of high mountains, along the creek, 12 miles above Santa Fe," June and July, 1847, *Fendler* 478 and 480, the latter number not distributed.

One of the most abundant species in the mountains east of Santa Fe, at altitudes of 2,100 to 2,400 meters, on open hillsides.

Senecio mogollonicus Greene, Leaflets **1**: 212. 1906.

"Dry flats on the West Fork of the Gila, in the Mogollones," August 7, 1903, *O. B. Metcalfe*.

Senecio neomexicanus A. Gray, Proc. Amer. Acad. **19**: 55. 1883.

"In New Mexico," *Wright* and other collectors.

A common species of the lower parts of the Organ Mountains, occurring in rather dry places; perhaps first collected in this range.

Senecio quaerens Greene, Leaflets **1**: 214. 1906.

A new name for *S. prionophyllus* Greene.

Senecio prionophyllus Greene, Leaflets **1**: 212. 1906.

=*Senecio quaerens* Greene.

"Moist flats on the West Fork of the Gila, in the Mogollones," August 7, 1903, *O. B. Metcalfe*.

Senecio rusbyi Greene, Bull. Torrey Club **9**: 64. 1882.

"Mogollon Mountains," August, 1881, *H. H. Rusby*.

Senecio sanguisorboides Rydb. Bull. Torrey Club **27**: 170. 1900.

"Santa Fe Canyon," *A. A. Heller* 3820 in 1897.

A conspicuous plant in the mountains east of Santa Fe, at elevations of 2,100 to 2,700 meters, growing in very moist places, especially along the edges of mountain streams.

Senecio toluccanus microdontus A. Gray, Syn. Fl. 1^2: 388. 1886.

=*Senecio microdontus* (A. Gray) Heller.

"Pinos Altos Mountains," *E. L. Greene* (mention made of other localities and collectors).

Senecio wootonii Greene, Bull. Torrey Club **25**: 122. 1898.

"At an altitude of 7,000 feet on the White Mountains," August 15, 1897, *E. O. Wooton* 491.

Collected along Eagle Creek. Only two or three sheets were secured.

Simsia? scaposa A. Gray, Smiths. Contr. Knowl. **5**: 98. 1853.

=*Encelia scaposa* A. Gray.

"Stony hills between the Mimbres and the Rio Grande," *Wright* in 1851.

Solidago aureola Greene, Pittonia **4**: 236. 1900.

"El Capitan Mountains, at 8,000 feet, in the pine belt," July 28, 1900, *F. S. Earle*.

Stevia macella A. Gray, Smiths. Contr. Knowl. **5**: 70. 1853.

"On shaded rocky cliffs of Coppermine Creek," *Wright* 1130 in 1851.

According to Doctor Gray this is a synonym of *S. micrantha* Lag.

Tetradymia filifolia Greene, Bull. Torrey Club **25**: 123. 1898.

"Round Mountain, of the White Mountain Range," *E. O. Wooton* 183 in 1897.

Tetraneuris angustifolia Rydb. Bull. Torrey Club **32**: 128. 1905.

"White Mountains," *E. O. Wooton* 374 in 1897.

Tetraneuris ivesiana Greene, Pittonia **3**: 269. 1897.

"On the Rio Zuni," *Dr. S. W. Woodhouse* in 1851; also collected by Doctor Newberry upon the Ives Expedition, May 14, 1858.

Tetraneuris trinervata Greene, Pittonia **3**: 267. 1897.
"Sandia Mountains," *J. M. Bigelow* in 1853.

Thelesperma formosum Greene, Pittonia **5**: 56. 1902.
"Near Santa Fe," June, 1897, *A. A. Heller* 3747.

Townsendia eximia A. Gray, Mem. Amer. Acad. II. **4**: 70. 1849.
"Sides of high mountains, Santa Fe Creek, and prairies on the Mora River," June to August, 1847, *Fendler* 353.
One of the commonest and handsomest flowers of this region, frequenting steep and often rather dry hillsides along with *Pinus scopulorum*, at elevations of from 2,100 to 2,500 meters.

Townsendia fendleri A. Gray, Mem. Amer. Acad. II. **4**: 70. 1849.
"Gravelly hillsides, Santa Fe," May to August, 1847, *Fendler* 350.
This is a plant of the sandy mesas and plains, flowering in the spring and early summer, while *T. eximia*, a very different species, of course, is found only in the mountains and blooms in late summer and autumn.

Townsendia formosa Greene, Leaflets **1**: 213. 1906.
"In the Black Range," *O. B. Metcalfe* 1434 in 1904.
A very distinct species that has been collected in the White and Sacramento mountains, and in the Black and Mogollon ranges.

Townsendia sericea papposa A. Gray, Mem. Amer. Acad. II. **4**: 69. 1849.
"Santa Fe, on arid hillsides, less frequently in grassy places," April and May, 1847, *Fendler* 349.

Villanova chrysanthemoides A. Gray, Smiths. Contr. Knowl. **5**: 96. 1853.
=*Villanova dissecta* (A. Gray) Rydb.
"Sides of mountains, at the copper mines."

Wootonia parviflora Greene, Bull. Torrey Club **25**: 122. 1898.
"On plains near the White Sands," August 25, 1897, *E. O. Wooton* 393.
A plant of not infrequent occurrence in this region, where it has been collected at several different times.

CICHORIACEAE.

Agoseris graminifolia Greene, Bull. Torrey Club **25**: 124. 1898.
"At 7,000 feet altitude in the White Mountains, in moist land," August 13, 1897, *E. O. Wooton* 513.
Collected at Gilmore's Ranch. Only two or three specimens were secured.

Chaptalia alsophila Greene, Leaflets **1**: 158. 1905.
"Black Range, New Mexico, at 7,000 feet, on shady northward slopes," October 4, 1904, *O. B. Metcalfe* 1454.

Crepis ambigua A. Gray, Mem. Amer. Acad. II. **4**: 114. 1849.
=*Hieracium fendleri* Schultz Bip.
"Level, grassy places along Santa Fe Creek," June to August, 1847, *Fendler*.

Hieracium brevipilum Greene, Bull. Torrey Club **9**: 64. 1882.
"Mogollon Mountains," August, 1881, *H. H. Rusby*.

Hieracium carneum Greene, Bot. Gaz. **6**: 184. 1881.
"South base of the Pinos Altos Mountains, New Mexico, in woods of *Quercus hypoleuca* and *Q. emoryi*," flowering in October, 1880, *E. L. Greene*.

Hieracium fendleri Schultz Bip. Bonplandia **9**: 173. 1861.
A new name for *Crepis ambigua* A. Gray.

Hieracium rusbyi Greene, Bull. Torrey Club **9**: 64. 1882.
"Mogollon Mountains," August, 1881, *H. H. Rusby*.

Macrorhynchus purpureus A. Gray, Mem. Amer. Acad. II. **4**: 114. 1849.
=*Agoseris purpurea* (A. Gray) Greene.
"Grassy places, bottom of Santa Fe Creek," July, 1847, *Fendler*.
Of rather sparing occurrence in moist meadows throughout the Santa Fe and Las Vegas mountains.

Malacothrix fendleri A. Gray, Smiths. Contr. Knowl. **5**: 104. 1853.
"Low, sandy banks of the Rio del Norte."

Ptiloria neomexicana Greene, Bull. Torrey Club **25**: 123. 1898.
"Mesas near Las Cruces," July 2, 1897, *E. O. Wooton* 482.

Rafinesquia neomexicana A. Gray, Smiths. Contr. Knowl. **3**: 103. 1852.
In spite of its specific name, this came originally from Texas.

Stephanomeria thurberi A. Gray, Mem. Amer. Acad. II. **5**: 325. 1854.
=*Ptiloria thurberi* (A. Gray) Greene.
"On the Sierra de los Animos, Sonora," June, 1851, *Thurber*.
It is doubtful whether this came from Sonora or New Mexico. The name of the range should be Sierra de las Animas.

Uropappus pruinosus Greene, Leaflets **1**: 213. 1906.
"Southwestern New Mexico and adjacent Arizona," *E. L. Greene* in 1877, *O. B. Metcalfe* in 1905.

LIST OF NEW BINOMIALS.

In the preparation of the foregoing list it was found advisable to make several new combinations in order to bring the nomenclature up to date. They are as follows:

	Page.
Agastache lanceolata (A. Gray) Standley *Cedronella cana lanceolata* A. Gray.	212
Agastache neomexicana (Briquet) Standley *Brittonastrum neomexicanum* Briquet.	211
Agastache rupestris (Greene) Standley *Cedronella rupestris* Greene.	212
Chamaesyce neomexicana (Greene) Standley *Euphorbia neomexicana* Greene.	199
Dichelostemma pauciflorum (Torr.) Standley *Brodiaea capitata pauciflora* Torr.	179
Parosela urceolata (Greene) Standley *Dalea urceolata* Greene.	194
Sideranthus serratus (Greene) Standley *Eriocarpum serratum* Greene.	222
Sideranthus wootonii (Greene) Standley *Eriocarpum wootonii* Greene.	222
Zygophyllidium biblobatum (Engelm.) Standley *Euphorbia bilobata* Engelm.	199

A BIBLIOGRAPHY OF NEW MEXICAN BOTANY.

By Paul C. Standley.

INTRODUCTION.

This paper has been prepared to give the student of New Mexican botany the obvious advantages of a special bibliography. Since no general flora of the Territory has been compiled, the results of the work of various earlier investigators are available only in scattered publications, some of them of such a character that they would not ordinarily be referred to. A reasonably complete bibliography will prevent oversights and save the labor of long and sometimes fruitless search.

A bibliography of New Mexican botany was suggested by the examination of a similar paper recently published in the University of Colorado Studies listing the literature of the plant life of that State. Several such lists of botanical papers had been published earlier, like those of Mr. C. V. Piper in his Flora of Washington and of Mr. J. W. Blankinship in the Montana Agricultural College Science Studies, but none that the writer has seen is so comprehensive as this more recent one. Piper lists but 54 titles and Blankinship still fewer, while for Colorado more than 500 publications are cited as dealing more or less directly with the flora of that State. The titles of the Colorado list cover a wide range of subjects, while those of the earlier ones were confined chiefly if not entirely to taxonomic botany.

The present paper is modeled upon that compiled for Colorado with certain modifications. The latter includes many titles useful only in ecological study, like those dealing with the meteorology and geology, and with the soils of the State. No such papers are entered here, because practically no work in plant ecology has been done in New Mexico, and it would require a specialist to select the publications that would be of use in that line of investigation.

The list is made up primarily of the works dealing with taxonomic botany, especially those in which new species are described from New Mexican material. Some definite references to New Mexican

specimens in monographs have been included. Articles dealing with plant distribution or ecology in the Southwest are mentioned whenever they are considered applicable to New Mexico. Publications upon economic botany have been cited in every case where found. No attempt has been made to complete the bibliography of the lower cryptogams; little is known of these in the Southwest.

This bibliography was prepared originally from the botanical library of the New Mexico Agricultural College, but at the National Herbarium several titles have been added. Some have been overlooked, no doubt. Most of the works listed are accessible in any good botanical library, but there have been included a few unpublished theses prepared by students of the Agricultural College and preserved in the library of that institution. Some of these are papers of considerable value.

LIST OF WORKS.

Bailey, Vernon. Biological survey of Texas. U. S. Dept. Agr. Biol. Surv. N. Amer. Fauna **25**: 1–222. 1903.

Contains notes upon life zones of southeastern New Mexico with maps showing distribution of certain plants in that and adjoining areas.

——— Sleepy grass and its effect on horses. Science n. ser. **17**: 392–393. 1903.

An account of the properties of *Stipa vaseyi*, a New Mexican grass.

——— Sleepy grass. Plant World **6**: 109–110. 1903.

Abstract of the preceding.

Bartlett, H. H. The geographic ranges of certain Junci poiophylli. Rhodora **11**: 155–157. 1909.

Contains a discussion of the range of *Juncus brachyphyllus* with the conclusion that it has its type locality in New Mexico.

Blount, A. E. Cañaigre. N. Mex. Agr. Exp. Sta. Bull. **14**: 37–44. 1894.

A discussion of *Rumex hymenosepalus* from an economic standpoint.

Bigelow, J. M. General description of the botanical character of the country [traversed by Whipple's expedition]. Pac. R. Rep. **4**[5]: 1–16. 1856.

——— Description of forest trees. Ibid. 17–26.

Several of the trees are New Mexican.

Blumer, J. C. Two junipers of the Southwest. Plant World **9**: 86–91. 1906.

The occurrence of *Juniperus pachyphloea* and *J. monosperma* is discussed.

Bray, William L. On the relation of the flora of the lower Sonoran zone in North America to the flora of the arid zones of Chile and Argentina. Bot. Gaz. **26**: 121–147. 1898.

This and the following papers, although not dealing directly with New Mexican botany, are of value because of their application to New Mexican areas.

——— The ecological relations of the vegetation of western Texas. Bot. Gaz. **32**: 99–123, 195–217, 262–291. 1901.

——— The vegetation of the sotol country in Texas. Bull. Univ. Tex. **60**: 1–24. 1905.

——— Distribution and adaptation of the vegetation of Texas. Bull. Univ. Tex. **82**: 1–108. pl. 1–14. 1906.

——— *See also* Uline, E. B.

Briquet, John. Description de quelques espéces nouvelles ou peu connues du genre Brittonastrum. Ann. Cons. Jard. Genève **6**: 157–162. 1902.
Describes *Brittonastrum greenei* and *B. neomexicanum*, from New Mexico.

Britton, N. L. A new species of Cyperus. Bull. Torrey Club **11**: 29. 1884.
Describes *Cyperus rusbyi*, from New Mexico.

——— John Strong Newberry. Bull. Torrey Club **20**: 89–98. 1893.
An account of the life of one of the earlier botanical explorers of New Mexico.

———, and **Rose**, J. N. New or noteworthy North American Crassulaceae. Bull. N. Y. Bot. Gard. **3**: 1–45. 1903.
Describes 3 new species from New Mexico.

Bush, B. F. The North American species of Fuirena. Rep. Mo. Bot. Gard. **15**: 87–99. 1905.
Several new species described, of which *F. cylindrica* is thought to come from New Mexico.

Canby, Wm. M. Some reminiscences of the late August Fendler. Bot. Gaz. **10**: 285–290, 301–304, 319–322. 1885.
An account of the life of one of the earliest botanical collectors in New Mexico.

Clements, F. E. *See* Pound, Roscoe.

Cockerell, T. D. A. Life zones in New Mexico. Bull. N. Mex. Agr. Exp. Sta. **15**: 52–59. 1895.
Treats the subject chiefly from an entomological standpoint, but mentions botanical aspects.

——— Some western weeds, and alien weeds in the West. Bot. Gaz. **20**: 502. 1895.
Deals with the occurrence of certain native and introduced weeds in the Territory.

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The life zones are defined by the occurrence of characteristic plants and animals in them.

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Localities for various plants are mentioned.

——— Abnormal leaves and flowers. Bot. Gaz. **24**: 293–294. 1897.
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——— *Eschscholtzia mexicana parvula*. Bot. Gaz. **26**: 279. 1898.
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An account of the date of flowering of various plants.

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——— Notes on some southwestern plants. Bull. Torrey Club **27**: 87–89. 1900.
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——— The lower and middle Sonoran zones in Arizona and New Mexico. Amer. Nat. **34**: 285–293. 1900.
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——— Flower and insect records from New Mexico. Entomological News **1901**: 38–43. 1901.
Fallugia micrantha described.

Cockerell, T. D. A. A new Sphaeralcea. Bot. Gaz. **32**: 60. 1901.
Sphaeralcea martii described from New Mexico.

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Cypripedium veganum described from New Mexico.

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Delphinium sapellonis described from New Mexico.

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——— Flowers and insects in New Mexico. Amer. Nat. **36**: 809–817. 1902.
Stations are given for numerous New Mexican plants.

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Quercus rydbergiana described from New Mexico.

——— Notes on New Mexico oaks. Torreya **3**: 83–86. 1903.
Notes upon the differences between the species of Quercus found about Las Vegas.

——— Two orchids from New Mexico. Torreya **3**: 139–141. 1903.
Corallorhiza grabhami described as new, and notes on *C. vreelandii*.

——— A new cocklebur from New Mexico. Proc. Biol. Soc. Washington **16**: 9–10. 1903.
Description of *Xanthium commune wootoni*.

——— A new subgenus for *Nyctaginia cockerellae*. Proc. Biol. Soc. Washington **16**: 52. 1903.

——— A new Hypholoma. Journ. Mycology **10**: 108–109. 1904.
A new species from New Mexico described.

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Descriptions of *Rosa pecosensis* and *R. neomexicana* and list of plants collected about Pecos.

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——— Contributions to the natural history of the Rocky Mountains. I. Univ. Colo. Stud. **3**: 45–50. 1905.
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——— *See also* Pollard, C. L.

Cockerell, Wilmatte Porter. A trip to the Truchas Peaks, New Mexico. Amer. Nat. **37**: 887–891. 1903.
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Both this and the following contain numerous references to New Mexican collections.

——— Preliminary revision of the North American species of Echinocactus, Cereus, and Opuntia. Contr. Nat. Herb. **3**: 367–462. 1896.

Coulter, John M. Botany of Western Texas. Contr. Nat. Herb. **2:** 1–588. 1891–94.
Includes many of the plants of southern New Mexico.[a]

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Coville, Frederick V. Revision of the United States species of the genus Fuirena. Bull. Torrey Club **17:** 1–8. 1890.
New Mexican material is mentioned.

——— Three editions of Emory's Report, 1848. Bull. Torrey Club **23:** 90–92. 1896.
A discussion of the editions and dates of publication of one of the earliest works dealing with New Mexican botany.

——— *Ribes mescalerium,* an undescribed currant from New Mexico and Texas. Proc. Biol. Soc. Washington **13:** 195–198. 1900.

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Dewey, L. H. Distribution of the Russian thistle in North America. Bot. Gaz. **20:** 501. 1895.
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Includes descriptions of three new subspecies. The paper is accompanied by a note concerning the locality written by Prof. T. D. A. Cockerell.

Eaton, D. C. Ferns of the southwest. Rep. U. S. Geogr. Surv. Wheeler **6:** 299–340. 1878.
New Mexican localities mentioned.

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Mentions specimens from New Mexico.

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Crataegus wootoniana described.

Emory, W. H. Notes of a military reconnaissance from Fort Leavenworth, in Missouri, to San Diego, in California. 416 p. 1848.
Contains numerous references to the general botanical features of the route.

Engelmann, George. [Report on Cactaceae.] *In* Emory, Mil. Recon. 157–158. pl. [13, 14]. 1848.
Describes three new cacti from New Mexico.

——— Botanical appendix. *In* Wisliz. Mem. North. Mex. p. 87–115. 1848.
Includes descriptions of numerous new species from New Mexico.

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[a] While this was not designed to cover New Mexican botany, it is nevertheless the only work that applies at all fully to the flora of southern New Mexico. On account of the close relationship existing between the flora of that district and that of western Texas, this book can be used as a manual of the flora of the southern part of the Territory, with many limitations of course. Doctor Coulter's work was published so many years ago that many new species have since been recognized in the floras of both areas; and many plants occur in southern New Mexico that are not found to the south and east in Texas.

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——— Cactaceae of the Boundary. *In* Bot. Mex. Bound., i. e., *in* Emory, U. S. & Mex. Bound. Surv. **2**[1][b]: 1–78. pl. 1–75. 1859.
Contains descriptions of numerous New Mexican species.

——— Description of the Cactaceae. Pac. R. Rep. **4**[5]: 27–58. pl. 1–24. 1856.
Many New Mexican Cactaceae described.

——— Revision of the Oenotherae of the subsection Onagra. *In* A. Gray's enumeration of the plants of Doctor Parry's collection in the Rocky Mountains. Supplement 2. Amer. Journ. Sci. II. **34**: 333–335. 1862.
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Contains a list of the trees of New Mexico.

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Description of *Philadelphus mearnsii* from New Mexico.

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A list of the ferns collected in New Mexico by H. H. Rusby.

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Hoffmanseggia falcaria rusbyi described as new.

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Includes description of *Aecidium rusbyi*.

Goss, Arthur. Ash analyses of some New Mexico plants. N. Mex. Agr. Exp. Sta. Bull. **44**: 1–14. 1903.
Contains the results of analyses of the ash of various native plants of southern New Mexico.

Gray, Asa. Plantae Fendlerianae Novi-Mexicanae: An account of a collection of plants made chiefly in the vicinity of Santa Fe, New Mexico, by August Fendler; with descriptions of the new species, critical remarks, and characters of other undescribed or little known plants from surrounding regions. Mem. Amer. Acad. n. ser. **4**: 1–116. 1849.
The earliest work of importance dealing with New Mexican botany. Contains descriptions of many new species from New Mexico.

——— Plantae Wrightianae Texano-Neo-Mexicanae. Parts I, II, Smiths. Contr. Knowl. **3**: 1–146. 1852; **5**: 1–119. 1853.
Part I, treating of a collection of plants made by Charles Wright in an expedition from Texas to New Mexico in 1849, contains descriptions of one or two New Mexican plants. Part II, on a collection made by Charles Wright in western Texas, New Mexico, and Sonora in 1851 and 1852, contains descriptions of many such plants.

——— Brief characters of some new genera and species of Nyctaginaceae, principally collected in Texas and New Mexico. Amer. Journ. Sci. II. **15**: 319–324. 1853.
Boerhaavia purpurascens described from New Mexico.

——— Plantae novae Thurberianae: The characters of some new genera and species of plants in a collection made by George Thurber, esq., of the late Mexican Boundary Commission, chiefly in New Mexico and Sonora. Mem. Amer. Acad. n. ser. **5**: 297–328. 1854.
Several new species described from New Mexico.

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Includes description of *Physalis fendleri*.

——— Characters of new plants of California and elsewhere, principally of those collected by W. H. Brewer. . . Proc. Amer. Acad. **7**: 327–401. 1867.
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Several new subspecies described from New Mexico.

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Descriptions of *Galium brandegei* and *Stachys rothrockii* from New Mexico.

——— Classification of the botanical collections made during the San Juan reconnaissance of 1877, in Colorado and New Mexico. Annual report of the Chief of Engineers for 1878, Appendix SS, 1833–40. 1878.
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A new species and a new subspecies described from New Mexico.

——— Novitiae arizonicae . . . : Characters of the new plants of certain recent collections, mainly in Arizona and adjacent districts. Proc. Amer. Acad. **17**: 199–230. 1882.
Several new species described from New Mexico.

——— Characters of new Compositae, with revisions of certain genera, and critical notes. Proc. Amer. Acad. **19**: 1–73. 1883.
Erigeron neomexicanus and *Senecio neomexicanus* described as new.

——— Miscellaneous genera and species. Proc. Amer. Acad. **19**: 74–96. 1883.
Sambucus melanocarpa described from New Mexico.

——— Synoptical flora of North America, vol. I, pt. II, 480 p.; vol. II, pt. I, 494 p. New York, 1886.
Contains descriptions of several new plants from New Mexico.

——— Revision of some polypetalous genera and orders precursory to the Flora of North America. Proc. Amer. Acad. **22**: 270–306. 1887.
Sida neomexicana described from New Mexico.

Gray, Asa, and Torrey, John. Revision of the Eriogoneae. Proc. Amer. Acad. **8**: 146–200. 1870.
Eriogonum microthecum fendlerianum described from New Mexico.

Greene, E. L. Notes on certain silkweeds. Bot. Gaz. **5**: 64–65. 1880.
Asclepias uncialis described from near Silver City.

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Six species described.

——— New plants of New Mexico and Arizona. Bot. Gaz. **6**: 183–185. 1881.
Four of these from New Mexico.

——— On the colors of some western flowers. Bot. Gaz. **6**: 198. 1881.

——— New plants from New Mexico and Arizona. Bot. Gaz. **6**: 217–219. 1881.
Five new species from New Mexico.

——— New species of plants, chiefly New Mexican. Bull. Torrey Club **8**: 97–99. 1881.
Five new species from New Mexico.

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Greene, E. L. New western plants. Bull. Torrey Club. **9**: 62–65. 1882.
Four of the new species New Mexican.

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Including *Artemisia franserioides* from New Mexico.

——— Enumeration of the North American Loti. Pittonia **2**: 133–150. 1890.
Lotus neomexicanus described from New Mexico.

——— [Note on *Agave parryi* in New Mexico.] Erythea **1**: 52. 1893.

——— Another bad guess at a name. Erythea **1**: 143–144. 1893.
Reference to *Rumex hymenosepalus*.

——— Some species of Dodecatheon. Erythea **3**: 37–40. 1890.
Dodecatheon radicatum new from New Mexico.

——— New or noteworthy species. XV. Pittonia **3**: 13–28. 1896.
Eriogonum densum and *Rhamnus betulaefolia* included as new.

——— New or noteworthy species. XIX. Pittonia **3**: 212–230. 1897.
Trifolium fendleri of New Mexico included as new.

——— New Compositae from New Mexico. Bull. Torrey Club **25**: 117–124. *pl. 330–334*. 1898.
Sixteen new species and one new subspecies described from the collections made by Prof. E. O. Wooton in 1897.

——— Studies in the Compositae. VII. Pittonia **3**: 264–298. 1898.
Three new species described from New Mexico.

——— New or noteworthy species. XXIII. Pittonia **3**: 343–349. 1898.
Three new species described from New Mexico.

——— New western species of Rosa. Pittonia **4**: 10–14. 1899.
Rosa suffulta described from northern New Mexico.

——— New choripetalous exogens. Pittonia **4**: 14–21. 1899.
Three new species of Draba described from New Mexico.

——— A decade of new Gutierrezias. Pittonia **4**: 53–58. 1899.
Five of them from New Mexico.

——— New or noteworthy species. XXIV. Pittonia **4**: 68–72. 1899.
Argemone squarrosa and *Lesquerella valida* included as new.

——— West American Asperifoliae. IV. Pittonia **4**: 86–97. 1899.
Two new species from New Mexico.

——— New or noteworthy species. XXVI. Pittonia **4**: 98–101. 1899.
New Mexican collections mentioned.

——— A fascicle of new Senecios. Pittonia **4**: 108–124. 1900.
Contains notes on *Senecio fendleri* of New Mexico.

——— A decade of new Pomaceae. Pittonia **4**: 127–131. 1900.
Two new species described in Amelanchier and one in Sorbus.

——— A fascicle of new Papilionaceae. Pittonia **4**: 132–139. 1900.
Five new species from New Mexico.

——— New or noteworthy species. XXVII. Pittonia **4**: 146–158. 1900.
Three new species from New Mexico.

——— A decade of new Gentianaceae. Pittonia **4**: 180–186. 1900.
Frasera venosa described from New Mexico.

——— Studies in the Cruciferae. III. Pittonia **4**: 187–207. 1900.
New species from New Mexico under Arabis and Cheiranthus.

——— New or noteworthy species. XXVIII. Pittonia **4**: 233–241. 1901.
Four new species described from New Mexico.

——— New species of Cerastium. Pittonia **4**: 297–304. 1901.
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——— New or noteworthy species. XXIX. Pittonia **4**: 318–320. 1901.
Erigeron setulosus new from New Mexico.

——— New or critical species of Acer. Pittonia **5**: 1–4. 1902.
Acer neomexicanum described from New Mexico.

Greene, E. L. Segregates of *Viola canadensis*. Pittonia **5**: 24–29. 1902.
Viola neomexicana described.

——— A fascicle of new Compositae. Pittonia **5**: 55–64. 1902.
Thelesperma formosum and *Chrysothamnus confinis*, New Mexican species.

——— New species of Apocynum. Pittonia **5**: 64–66. 1902.
Apocynum laurinum New Mexican.

——— North American species of Amarella. Leaflets **1**: 53–56. 1904.
Amarella revoluta and *A. cobrensis* from New Mexico.

——— Some western buckthorns. Leaflets **1**: 63–65. 1904.
Two new species of Rhamnus from New Mexico.

——— New species of Ceanothus. Leaflets **1**: 65–68. 1904.
Includes *Ceanothus mogollonicus* from New Mexico.

——— Two new Sophiae. Leaflets **1**: 96. 1904.
Sophia obtusa and *S. serrata*, both New Mexican.

——— Three new Heucheras. Leaflets **1**: 111–112. 1905.
Two of them from New Mexico.

——— Segregates of the genus Rhus. Leaflets **1**: 114–144. 1905.
Three new species from New Mexico.

——— New plants from southwestern mountains. Leaflets **1**: 145–154. 1905.
Numerous new species described from New Mexico.

——— New species of Chaptalia. Leaflets **1**: 158. 1905.
Chaptalia alsophila from New Mexico.

——— New or noteworthy species. Leaflets **1**: 199–200. 1905.
Dalea urceolata new from New Mexico.

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Eight new species described.

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Rhus sorbifolia described from northern New Mexico.

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A new species from New Mexico.

——— New species of the genus Mimulus. Leaflets **2**: 1–8. 1909.
Mimulus cordatus described from New Mexico.

——— New western Asteraceae. Leaflets **2**: 8–13. 1909.
Pyrrocoma amplectens new from New Mexico.

——— Novitates Boreali-Americanae. III. Species novae generis Aconiti. Repert. Nov. Sp. Fedde **7**: 1–6. 1909.
Two from New Mexico.

——— Novitates Boreali-Americanae. IV. Repert. Nov. Sp. Fedde **7**: 195–197. 1909.
Describes two New Mexican species of Gutierrezia.

——— Three new Eriogonums, Muhlenbergia **6**: 1–3. 1910.
Two of them from New Mexico.

——— Three new Astragali. Leaflets **2**: 42–3. 1910.
One new species from New Mexico.

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Rosa mirifica described from New Mexico.

Greene, E. L. Studies of Thalictraceae. II. Leaflets **2**: 89–94. 1910.
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Greenman, J. M. *See* Robinson, B. L.

Griffiths, David. Concerning some west American smuts. Bull. Torrey Club **31**: 83–88. 1904.
Includes notes upon some from New Mexico.

——— Illustrated studies in the genus Opuntia. II. Rep. Mo. Bot. Gard. **20**: 81–95. pl. 2–13. 1909.
Describes *Opuntia dillei* from southern New Mexico.

Griffiths, David, and Hare, R. F. Prickly pear and other cacti as food for stock. N. Mex. Agr. Exper. Sta. Bull. **60**: 1–134. 1906.
Includes descriptions of several New Mexican Cactaceae, statement of the localities in which they occur, and chemical analyses of some of them.

——— The tuna as food for man. N. Mex. Agr. Exp. Sta. Bull. **64**: 1–88. 1907.
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Hare, R. F. *See* Griffiths, David.

——— Cañaigre. N. Mex. Agr. Exp. Sta. Bull. **49**: 1–15. 1904.
Discussion of the chemical composition of *Rumex hymenosepalus* and of its economic importance.

Haussknecht, C. Monographie der Gattung Epilobium. 318 p. Jena, 1884.
Pages 237 to 279 deal with the North American representatives of the genus; *Epilobium fendleri* and *E. novomexicanum* described from New Mexico.

Havard, Dr. V. Drink plants of the North American Indians. Bull. Torrey Club **23**: 33–46. 1896.
References made to customs of Indians of New Mexico.

Heimerl, Anton. Studien über einige Nyctaginaceen des Herbarium Deleessert. Ann. Cons. Jard. Genève **5**: 177–197. 1901.
Four new subspecies described from New Mexico.

Heller, A. A. Notes on Kuhnistera. Bull. Torrey Club **23**: 117–125. 1896.
Rather extensive notes upon one New Mexican species.

——— Two botanists in New Mexico. Plant World **1**: 21–24. 1897.
An account of Professor and Mrs. Heller's collecting trip in northern New Mexico in 1897.

——— Notes on plants of New Mexico. Bull. Torrey Club **24**: 477–480. 1897.
Mention made of the peculiarities and distribution of various plants.

——— New and interesting plants from New Mexico. Minn. Bot. Stud. **2**: 33–35. 1898.
Three new species described.

——— New plants from western North America. I. Bull. Torrey Club **25**: 193–201. pl. 338–340. 1898.
Six new species from New Mexico.

——— New and interesting plants from western North America. IV. Bull. Torrey Club **25**: 626–629. 1898.
Linum australe described from New Mexico.

——— New and interesting plants from western North America. VI. Bull. Torrey Club **26**: 547–552. 1899.
Aragallus pinetorum and *Mertensia pratensis* new species from New Mexico.

——— New and interesting plants from western North America. VII. Bull. Torrey Club **26**: 588–593. 1899.
New Mexican localities mentioned for several new species.

——— New and interesting plants from western North America. VIII. Bull. Torrey Club **26**: 621–627. 1899.
Three new Drabas from New Mexico described.

Hough, Myrtle Zuck. Plant names of the southwestern United States. Plant World **3**: 137–139. 1900.
Lists local names for several New Mexican plants.

Johnston, J. R. A revision of the genus Flaveria. Proc. Amer. Acad. **39:** 279–292. 1903.

Contains references to New Mexican collections.

Jones, Marcus E. Contributions to western botany. No. 3. Zoe **3:** 283–309. 1893.

Contains notes upon New Mexican specimens of *Astragalus bigelovii.*

——— Contributions to western botany. No. 4. Zoe **4:** 22–54. 1893.

Contains references to New Mexican material.

——— Contributions to western botany. No. 3. The Navajo Basin. Zoe **4:** 366–367. 1894.

Part of the area treated is in New Mexico.

——— Contributions to western botany. No. 8. 43 p. 1898.

Two new species of Astragalus from New Mexico.

Land, W. J. G. Spermatogenesis and oogenesis in *Ephedra trifurca.* Bot. Gaz. **38:** 1–18. pl. 1–5. 1904.

The material upon which the work was based came from southern New Mexico.

Liebmann, F. M. [Without title.] Overs. Dansk. Vidensk. Selsk. Forh. **1854:** 170. 1854.

Quercus fendleri described from New Mexico.

MacBride, T. H. The slime moulds of New Mexico. Proc. Iowa Acad. Sci. **12:** 33–38. 1905.

A list of species collected by the author in New Mexico.

——— The Alamogordo desert. Science n. ser. **21:** 90–97. 1905.

A discussion of the botanical and geological features of the White Sands and the surrounding country.

MacDougal, D. T. *See* Coville, Frederick V.

Mackenzie, K. K. Notes on Carex. II. Bull. Torrey Club **34:** 151–155. 1907.

Carex neomexicana described from New Mexico.

——— Notes on Carex. III. Bull. Torrey Club **34:** 603–607. 1907

A new species described from New Mexico.

Mead, I. R. Study of the life of the tornillo zone. Thesis, New Mexico Agricultural College. MS. in library N. Mex. Agr. Coll.

Contains the results of observations upon the plants and insects of certain parts of the Mesilla Valley.

Mearns, E. A. Mammals of the Mexican Boundary of the United States. A descriptive catalogue of the species of mammals occurring in that region, with a general summary of the natural history, and a list of trees. U. S. Nat. Mus. Bull. **56:** 1–530. 1907.

Many of the trees listed are from New Mexican localities, some of them species not before reported from the Territory.

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[a] Much the same may be said of this as of Coulter's Botany of Western Texas. Rydberg's Flora, however, is more useful in the northern part of New Mexico than Coulter's in the southern part, being newer and more complete. The relation between the flora of northern New Mexico and that of southern Colorado, too, is possibly closer than that existing between those of southern New Mexico and western Texas. Almost all the plants occurring in the Santa Fe and Las Vegas mountains and the surrounding region will be found listed in the Flora of Colorado.

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